

THE EFFECTS OF A CAREER DEVELOPMENT COURSE
ON CAREER MATURITY LEVELS AND ON CAREER
MATURITY AS IMPACTED BY DECISION-MAKING STYLES,

by

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Dissertation submitted in partial
fulfillment of the requirements for
the degree of Doctor of Education in the
Graduate School of Education of Virginia Tech

DOCTOR OF EDUCATION

in

Counseling and Student Personnel Services

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October, 1981
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IN MEMORY

OF

ACKNOWLEDGEMENT

As I review the past few years, and all that has happened, I feel the strong impact of many people who have extended themselves in many ways on my behalf. I would like to express my appreciation.

Most of all, and most difficult to do, is my feeling of appreciation to

, who has shared the last few years of my life, played the role of "mid-wife" to this dissertation. Her love, support, and encouragement kept me going -- the endless hours of listening, editing, typing and numerous sacrifices, without which I could not have completed this task. Also to and who shared their mother, and in sharing themselves provided some of the most wonderful experiences of my life.

My deep appreciation goes to my friend,

, whose constructive criticism and encouragement throughout my post graduate school experiences was so helpful, for always having faith in me when at times I felt so little. And to...

- , whose patience, faith and wisdom have helped me grow and understand.

- (soon to be), my comrade through the ups and downs who was always there to listen and care. We made it!

- My friends who taught the classes, followed my instructions and were always so cooperative;

, , , , and

- for his assistance in helping me write the computer programs, and tolerating my moments of panic.

- My dissertation committee for their assistance and support: Dr. Dean Hummel, Dr. Charles Humes, Dr. Jimmie Fortune, Dr. Lynda Beemer and especially Dr. John Burton, for many reasons, but especially for his support and integrity.

- Finally, my typist, , for her patience and precision.

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CHAPTER I

INTRODUCTION

Various studies have consistently found that educational-vocational problems are of great concern to contemporary college students (Carney & Barak, 1979; Hitchcock, 1973; Kramer, Bergan & Miller, 1974). A recent survey indicates that most high school seniors expect to receive assistance with career planning in college (Prediger, Roth & Noeth, 1974). Moreover, the present tight job market and variety of occupational choices, as well as the impact that career decisions have on relationships, lifestyle and personal development, have had a bewildering effect on a large portion of college students (Benedict, Apsler & Morrison, 1977; Kramer, Berger & Miller, 1974). College faculty members stress that students lack reliable information regarding career possibilities and that frequently college seniors are still unaware of their occupational goals upon graduation (Krupa & Vener, 1978). A number of authors (Gervirtz, 1978; Lunneburg, 1975; Schenk, 1976) agree that students need help in making career plans.

The problem of how to facilitate career development in college students is one that often confronts counselors (Schenk, Johnston & Jacobsen, 1979). Career development is a process whereby individuals develop realistic professional and personal goals for their future. It is where strategies are developed for movement toward these goals. It is achieved by investigating the options which are appropriate and available as determined by an assessment of the individual's personal needs, resources, interests, values, aptitudes, and the influences of the social environment (Hanley & Howland, 1978).

One method of assisting students has been to offer career development courses (Brandt, 1977). The growth of such courses has been remarkable (Newall, 1976), and several colleges have developed such programs (Adams, 1979; Babcock & Kaufman, 1976; Davidshofer, Thomas & Preble, 1976; Evans & Rector, 1978; Ganster & Lovell, 1978; Schenk, Johnston & Jacobsen, 1979). In one study using a stratified sample ($n=54$) of community colleges, almost three-quarters of these institutions were found to provide career planning services (Wiener, Payne & Remer, 1980). Most career development programs at the college level take a pragmatically eclectic approach using a combination of experiential exercises and decision topics drawn from a variety of perspectives (Ganster & Lovell, 1978).

Career maturity has often been associated with career education (Omwig, Tullock & Thomas, 1975). Career maturity (sometimes called vocational maturity) refers to the various behavioral dimensions along which vocational development proceeds (Schenk, 1976). Crites (1965) has stated that enhancing career maturity is a major objective of career development. Schenk et al., (1979) have indicated that the concept of career maturity can serve as a conceptual tool for designing and evaluating the impact of career development programs for students. Super and Harris-Bowlsby (1979) using results of the "Career Patterns Study" (Super & Overstreet, 1960), have provided a rationale for appropriate content of career development programs, which have been used with high school students and which will be expanded for college students in this study. The content of the career development program designed for this study was taken from factors which appear to contribute significantly to vocational maturity as a result of twenty-five years of study of career development patterns (Thompson, Lindeman & Super, 1978). The results of these studies, detailed in chapter two establish the rationale of the course content.

One researcher has suggested that the career education movement has been accepted more on faith than on a demonstration of achievement (Newall, 1976), and with others (Schenk et al., 1978) has called for continued research into the efficacy of career development programs. In a review of

the literature by Schenk et al., (1979) the impact of career development experiences on vocational maturity suggests that the results (although mixed) are usually positive. These authors state that "In virtually every case where significant positive results are not achieved, positive trends in the predicted direction are noted. It seems that the question is not whether we can, in fact, increase vocational maturity in individuals, but rather, what is the most effective way to go about doing so" (p. 285).

The ability to make career decisions is an integral aspect of the career development process (Super, 1974). Moreover, not only are career decisions among the most critical decisions facing the maturing adult (Super, 1980), but they can also be the most difficult and complex (Furbish, 1979). Although the importance of these decisions is undisputed, little is known about what individuals need to do to make satisfactory decisions (Krumboltz, 1979; Nickerson & Freehter, 1977; Thorenson & Ewart, 1976). Harren (1979) has developed a career decision-making model which addresses the personality characteristics, developmental tasks and the interpersonal or situational factors which affect the decision-making process.

Harren's model (1979) has four major components; (1) the decision-making process; (2) the decision-making characteristics; (3) the developmental tasks and; (4) the

decision-making situation. Within the component of decision-making characteristics is the individual's decision-making style: rational, intuitive or dependent. Harren (1979) postulates, and recent studies (Krimsky-Montague, 1978; Rubinton, 1980) seem to confirm, that these decision-making styles have an important effect on the career decision-making process. Yet, a literature search for this study did not reveal research that explores the relationship between decision-making styles and the effects of a comprehensive career education course on career maturity.

Medonca and Siess (1976) state that vocational indecision is primarily a result of inadequate problem-solving abilities. What makes a "good" decision-maker? How are career decisions made? Are there personal factors that impede or facilitate the decision-making process? Harren's (1979) Career Decision Model (CDM) provides a framework with which to answer these questions. If career education courses are designed to help students experience gains in career maturity, could certain types of decision-makers experience more gains because of the way they process information and arrive at conclusions? Harren's theory suggests just that. He postulates that certain types of decision-makers are more effective than others. A literature search for this study did not reveal research which tests that assumption in terms of differential gains in

career development resulting from a career education course. Confirmation of this theory could assist counselors in the evaluation of students and in the design of strategies for career development.

Statement of the Problem

A number of sources have indicated that students need help in making career decisions. Colleges have responded to that need by providing career development programs. A commonly accepted measure of career development has been measurement of vocational/career maturity. One of the most important components of career development is that of making career decisions, yet little is known about what effect decision-making styles have on outcomes.

The questions specifically addressed in this study are related to measuring the effects of a career education course on career maturity and the impact of decision-making styles on such an experience. Will a comprehensive career education course have a significant effect on participants? Will certain styles of decision-making predict outcome gains in career maturity?

The problem of interest to this investigation can be stated briefly in the form of a research hypothesis:

Students who participated in the treatment increased significantly on pre-post scores on Super's (1976) Career Development Inventory (CDI) composite score, over students who did not receive treatment.

a. There is significant ($p \leq .05$) difference in the CDI scale scores and type of decision-making style.

b. There is significant ($p \leq .05$) interaction effect between the CDI scale scores and decision-making style for students who received treatment.

Rationale for the Study

The rationale for this study is based on the need to explore the effects of career development programs and also the effects of decision-making style on outcomes of such an experience.

A number of authors (Carney & Barak, 1979; Hitchcock, 1979; Kramer, Berman & Miller, 1974) have found that contemporary college students are greatly concerned about educational-vocational planning. Making educational-vocational decisions is difficult and complex (Furbise, 1979), yet is essential to career development. Little is known about what an individual needs to do to make satisfactory decisions (Krumboltz, 1976; Nickerson & Freeher, 1977; Thorenson & Ewart, 1976).

More than three-quarters of the colleges studied in a stratified sample ($n = 54$) offered career planning programs (Weiner, Payne & Remer, 1980), and one method of helping students is to offer career education courses (Brandt, 1977). A number of colleges offer such courses (Adams, 1979; Babcock & Kaufman, 1976; Davidshofer, Thomas & Preble, 1976; Evans & Rector, 1978; Ganster & Lovell,

1978; Housley & Hichman, 1975; Schenk, Johnston & Jacobsen, 1979), and some researchers have suggested that their remarkable growth (Newell, 1976) has been based more on faith than on a demonstration of achievement. These and other researchers have called for continued research into the outcomes of these programs.

Recent studies have postulated that there are various decision-making styles (Arroba, 1977; Dinklage, 1968, Harren, 1979; Lunneberg, 1978; Scherba, 1979). A number of recent studies evaluating Harren's (1979) work (Krimsky-Montague, 1978, Rubinton, 1980) have suggested that an individual's decision-making style has an important effect on outcomes of career decision-making.

This study will investigate both the impact of a comprehensive career education course in terms of career maturity measurement, as well as the effects of an individual's decision-making style on the outcomes. The increased popularity of, and the demonstrated need for, such courses, support the importance of this study. This is particularly relevant at a time when accountability, staff reductions, and reductions of services are pressing issues in the academic world.

Career decision-making is an integral part of career development, and information about the way a student makes a decision and the effects that decision-making style will have on career development outcomes can be of great

importance to both counselor and student.

Definitions

In the context of the current study, the following definitions apply:

Career. Refers to the lifelong process of working, whether for pay or not. More process oriented than occupation, which can be defined as specific work engaged in for pay (Furbish, 1979).

Career Development. Defined as a process whereby individuals develop realistic professional and personal goals for the future as well as building strategies for movement towards these goals through the investigation of appropriate and available options open to the individual based on personal needs, on direction-orientation and on the dynamics of surrounding social and economic environments (Haney & Howland, 1978).

Career Education Course. Refers to a course offered at Northern Virginia Community College called Career Education (General 108) at the Annandale campus and Psychology of Personality (Psychology 119) at the Alexandria campus. Both have the same content which includes: career theories, value of work, awareness of personal values, needs, interests, life-style, abilities, career search; working statement, resources, information, realities of a job search, where to look, decision-making, goal-setting, life-planning, job search;

resume, cover letter, interviewing skills, follow-up letter, and evaluation. A three-credit course which meets for three hours a week for ten weeks.

Career Maturity. A measurement of an individual's vocational maturity in relation to either chronological age and appropriate life stages or the behavior of others coping with the same developmental tasks (Super, 1957). In this study, determined as the score which an individual receives on the Career Development Inventory (Super, 1976).

Decision-Making Model. A description of a psychological process in which one organizes information, deliberates among alternatives, and makes a commitment to a course of action (Harren, 1979).

Dependent Decision-Maker. A decision-making style characterized by a denial of personal responsibility for decision-making and a projection of that responsibility outside of self. Individual heavily influenced by the expectations and desires of authorities and peers. Dependent decision-maker tends to be passive and compliant and has a high need for social approval, as well as to perceive the environment as providing restricted or limited options. While this style may reduce the immediate anxiety associated with decision-making, it is likely to ultimately result in lack of fulfillment or personal satisfaction (Harren, 1979).

Intuitive Decision-Maker. Accepts responsibility for decision-making. Intuitive style involves little anticipation of the future, information seeking behavior or logical weighing of factors. Characterized by the use of fantasy, attention to present feelings, and an emotional self-awareness as the basis for decision-making. Commitment to a course of action is reached relatively quickly, and its basic "rightness" is felt internally. Often the individual cannot state explicitly how he or she came to a decision. This style is dependent on fluctuation in the individual's internal state and upon an individual's capacity to accurately represent an unfamiliar situation in fantasy (Harren, 1979).

Rational Decision-Maker. Style characterized by the ability to recognize the consequences of earlier decisions upon later decisions. Requires an extended time perspective in which several sequential decisions are viewed as a means-end chain. Individual anticipates the need to make decisions in the future and prepares for them by seeking information about self and the anticipated situation. Individual's decisions, carried through deliberately and logically, are effective to the degree that accurate information about the situation is acquired and the individual's self-appraisal is realistic. This style represents the ideal of the self-actualized decision-maker; one who is the architect of one's own future as one lives it (Harren, 1979).

Assumptions

The subjects of this study, students at Northern Virginia Community College, are representatives of students who elect to participate in a career education course. It is assumed that the measuring instruments should not affect the course outcomes, since all participants contract for a grade by completing clearly-defined, specific course tasks, and the results of the CDI and the ACDM-S have no bearing on a grade. Additionally, it is assumed that differences in personality and style among the facilitators of the course would not significantly affect the results of the study if they were closely matched in terms of training and experience and the course was highly structured.

Delimitations of the Study

This investigation is limited to students at Northern Virginia Community College. External validity must be established before statements concerning the effectiveness of these courses can be applied to other students. Replication in a similar setting with similar groups could provide the basis for further generalization.

An effort was made to select facilitators with comparable training and experience, but it was not possible to control for the personality variables which are present from the interaction variable in each class. Although all

participants in this investigation were self-selected, it was expected that some subjects would find the course experience more relevant to their particular needs at that particular time. Variance in motivational levels which might affect outcomes cannot be controlled.

Although the control group was not selected randomly, it was made as equal to the treatment group as possible.

Summary

Students often experience difficulty in making career decisions and colleges have recognized the need to facilitate career development through career planning programs.

An important outcome of career development programs is career maturity, and it has been used frequently as a determinant of the effectiveness of these programs.

An integral part of career development is the ability to make "good" decisions but the decision-making process is not clearly understood. Harren (1979) has developed a model of career decision-making and has identified different styles of decision-making with this model. These styles, when used in recent studies, have been shown to have an effect on outcomes.

This study will investigate the effects of a comprehensive career education course on the concept of career maturity and the impact of decision-making styles on outcomes.

CHAPTER II

REVIEW OF THE LITERATURE

Topics related to the present study are reviewed on the following pages in order to provide a background for research into the impact of a career education course on vocational maturity and decision-making styles. This review covers literature that deals with the historical development of career development, the concept of career maturity, the measurement of career maturity, and the impact of career development on career maturity in college students, career decision-making theories and decision-making styles. There is also a review of career development programs for college students designed to increase gains on measures of career maturity. Career decision-making theories are covered broadly to provide a background for understanding how career decisions are made. Decision-making style theories and studies are presented and Harren's (1979) career decision-making theory is examined.

Career Development Theory - Historical Perspective

Before the 1950's, prevailing theories of vocational development (Hull, 1928; Kitson, 1925; Parsons, 1909),

although known by various other names, were of the trait-factor variety. Osipow (1973) stated that all trait-factor theories make essentially the same assumptions, namely that career decisions consist of a straightforward matching of an individual's abilities and interests with vocational opportunities. Vocational choice is often seen as a single event taking place some time in adolescence.

During the 1950's and 1960's a number of researchers (Crites, 1965; Dysinger, 1950; Ginzberg et al., 1951; Hershenson et al., 1966; Super et al., 1957; Tiedeman et al., 1967) espoused theories of career development which rendered the trait-factor theory inadequate. The new focus was on a career model which portrayed career development as a sequence of choices; a comprehensive, multi-faceted, ongoing process which encompasses numerous interrelated behaviors at various points in an individual's life (Crites, 1965). Career development has been described as a process whereby individuals develop realistic goals and strategies for the future of their professional and personal life-styles. Movement toward these goals occurs through the investigation of appropriate and available options and is based on personal needs and the dynamics of one's social and economic environments (Haney and Howland (1978)).

The last three decades have witnessed a shift from a static view of vocational choice to an emphasis on career development as an ongoing process integrated into human

development.

Super (1957, 1974) builds a theory of career development on four assumptions about human development: (1) life can be viewed as a sequence of definable stages of development, (2) each of these stages is characterized by a set of tasks and skills that are typically learned within that stage, (3) if these tasks are not mastered at the appropriate time, a later stage of development may be handicapped, and (4) maturity consists of having the attitudes, knowledge and skills to cope adequately with the tasks of a given life-stage.

The process of career development is essentially that of developing and implementing the self-concept: it is a compromise process in which the self-concept is a product of the interaction of inherited aptitudes, neural and endocrine make-up, opportunity to play various roles, and evaluations of the extent to which results of the role playing meet with the approval of significant others, (Super, 1957).

Applying this perspective to information on career development, Super (1957, 1974) proposed that career development is a lifelong process which can be defined in five stages: growth (age 0-15), exploration (age 15-25), establishment (age 25-45), maintenance (45-65) and decline (age 65 and over). Super has further defined these life-stages according to developmental tasks and coping

behaviors such as crystallization, specification and implementation (see figure 2.1). Figure 2.2 depicts those factors that, according to Super (1980), influence career/vocational maturity, occupational/vocational choice, and vocational adjustment because they are all aspects of the career development process.

Career Maturity

The concept of career maturity grew out of an emphasis on career development theory and refers to the various behavioral dimensions along which one progresses. Career maturity develops over a period of time and denotes the degree of development or the place one reaches on a continuum representing career development (Omvig, Tulluch & Thomas, 1975). The expansion of career maturity theories created a need to define and measure the process of choosing, entering and progressing on a path of career vocational development.

The term vocational maturity (now used interchangeably with career maturity) was first used by Dysinger (1950) to describe a developmental process rather than a single vocational decision. Super and Overstreet (1960) attempted to measure vocational maturity in a factor-analytic model in their "Career Pattern Study", a longitudinal study of ninth grade males. Twenty-five years later, Thompson, Lindeman and Super (1978) studied the career development patterns

1. Crystallization of a vocational preference (14-18)
 - a. awareness of the need to crystallize
 - b. use of resources
 - c. awareness of factors to consider
 - d. awareness of contingencies which may affect goals
 - e. differentiation of interests and values
 - f. awareness of present-future relationships
 - g. formulation of a generalized preference
 - h. consistency of preference
 - i. possession of information concerning the preferred occupation
 - j. planning for the preferred occupation
 - k. wisdom of the vocational preferences
2. Specification of a vocational choice (18-21)
 - a. awareness of the need to specify
 - b. use of resources in specification
 - c. awareness of factors to consider
 - d. awareness of contingencies which may affect goals
 - e. differentiation of interests and values
 - f. awareness of present-future relationships
 - g. specification of a vocational preference
 - h. consistency of preference
 - i. possession of information concerning the preferred occupation
 - j. planning for the preferred occupation
 - k. wisdom of the vocational preference
 - l. confidence in a specific preference
3. Implementation of a vocational preference (21-24)
 - a. awareness of the need to implement preference
 - b. planning to implement preference
 - c. executing plans to qualify for entry
 - d. obtaining an entry job

Figure 2.1

Vocational Development Tasks

(Super, 1963: Figure 1)

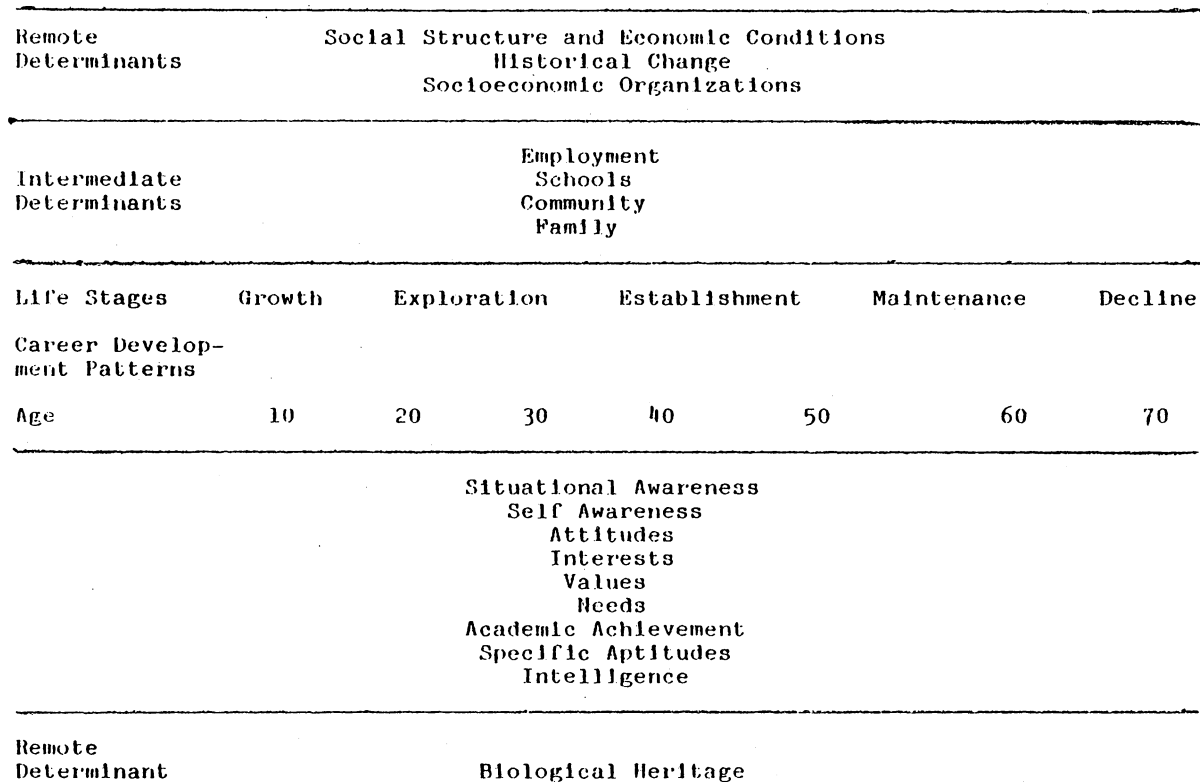


Figure 2.2

Personal and Situational Determinants of Career Development

(Adapted from Super, 1980)

of the same group of males and identified six factors which appeared to contribute significantly to vocational maturity: "(1) awareness of the need to plan ahead and of the relationship between present and future events, (2) knowing what information is necessary for career planning and knowing how and where to get it; (3) knowing how to make decisions; (4) possessing general career-development information; (5) possessing specific information about a variety of occupations and the organization of the world of work; and (6) possessing even more specific information about a cluster of preferred occupations. The career development course designed by this investigator assists college students in each of these areas," (Super and Harris-Bowlsby, 1979).

Super (1957, 1974) proposes a series of career development stages which are further defined by tasks which need to be accomplished to progress in career maturity. Super and Harris-Bowlsby (1979) state that once specific life stages have been defined, along with their component developmental tasks and coping behaviors, vocational maturity can be viewed as the relative ability of an individual to accomplish the tasks and exhibit the attitudes and behaviors that are appropriate to his or her chronological age.

Career Maturity Measurement

Super and Overstreet (1960) contend that career maturity is a developmental process like other kinds of maturity and

can be explained in terms of the behavioral characteristics of a given stage in the process. The theory of vocational maturity is based on three principles of developmental psychology: (1) it proceeds from random undifferentiated activity to goal-directed activity; (2) it moves toward increased awareness and orientation to reality; and (3) it becomes increasingly independent. These principles form the basis of the characteristics and behaviors evaluated by the Career Pattern Study of Super and Overstreet (1960), a longitudinal study which explored levels of vocational maturity.

In order to measure behaviors and characteristics of vocational maturity, Super and Overstreet (1960) constructed an interview scale which they labeled Indices of Vocational Maturity (IVM). The IVM was developed around six indices: (1) concern with choice, (2) acceptance of responsibility for choice and planning, (3) specificity of planning for preferred occupations, (5) extent of planning, and (6) use of resources in orientation.

Gribbons and Lohnes (1969) developed another instrument, the Readiness for Vocational Planning Scale (RVPS), to assess the vocational maturity of a group of adolescent males and females. The RVPS uses standardized interviews to measure vocational maturity as defined by Super. It has had substantial predictive validity when the criterion was choice of high school curriculum.

Both the IVM and the RVPS rely on interviews for data collection. When compared to a standardized paper and pencil inventory, they suffer from some of the shortcomings of openended interviews (Kerlinger, 1973); they are expensive to use, time-consuming, and difficult to code and evaluate.

Lesser-known instruments to measure vocational maturity were developed by Nelson (1956), Conte (cited in Curry, 1971), and Sheppard (1971).

Crites (1965), a member of the team that worked on the theoretical framework of the Career Pattern Study, constructed the Vocational Development Inventory (VDI) to measure vocational attitudes and competencies. In 1973, he revised the VDI and renamed it the Career Maturity Inventory (CMI). It has been used in more than 400 studies (Fitzgerald & Crites, 1980).

The attitudinal scale of the CMI measures: (1) involvement in the choice process, (2) orientation toward work, (3) independence in decision-making, (4) preference for career choice factors, and (5) conceptions of the choice process. The competence scale measures: (1) self-appraisal, (2) occupational information, (3) goal selection: (4) planning, and (5) problem-solving abilities.

A recently-developed instrument for measuring career maturity is the Career Development Inventory (CDI) (Super & Forest, 1972; Super et al., 1976). The CDI, college form, is an objective, paper and pencil inventory for

measuring vocational maturity in college-age men and women. The inventory consists of five scales and yields five scores: two attitudinal, and three cognitive.

Scale A, Planning, measures the amount of time a student reports giving to thinking about and planning career-related activities such as school courses, school and community activities, and post-school education and work. It also shows how much he or she reports knowing about occupations and job opportunities. People who plan ahead usually manage their careers better than those who don't. Scale B, Exploration, shows how students feel about using sources of information about education, occupations, and careers, and how helpful they believe these different sources have been. Scale C, Career Decision-Making, shows how well students' solutions of career decision problems agree with those of experts who have studied the careers of high school and college students and of adults who have left or graduated from school or college. It measures how well they know about the principles guiding the making of good career decisions, as well as their ability to apply them. Scale D, World-of-Work Information, tests how much students know about choosing a career, entering and advancing in a job or field of work. It shows how much students know about the variety of occupations that exist today, about their duties, training, opportunities, and rewards, and what it

takes to succeed. Students who know such things tend to make better career decisions. Scale E, Knowledge of the Preferred Occupational Group, compares what each student knows about the occupation and group of related occupations which he or she said, in the CDI, is of greatest interest to him or her. It covers education and training requirements, what people do at work in the chosen group of occupations, the characteristics that are related to success and satisfaction, and its life-style, (Super & Overstreet, 1979)

Impacting Vocational Maturity

The following is a review of the literature dealing with experimental studies of career development experiences in college settings.

Career Development Inventory Studies

Schenk (1976), in his dissertation, studied the effects of a career group experience on vocational maturity of 200 college freshmen and sophomores. Using a pre-post-test design with a control group, Schenk used Super's Career Development Inventory (CDI) to measure career maturity and used Hollond's Vocational Preference Inventory (VPI) to investigate vocational consistency/inconsistency, vocational differentiation/non-differentiation, treatment versus control, and their interaction.

An analysis of variance detected that students in the experimental group significantly increased ($p \leq .01$) their scores on all four CDI scales from the pre-test to the post-test. Students in the control group showed no significant gains from pre-test to post-test on any of the vocational maturity measures. Schenk found that students in the experimental groups who were considered inconsistent on the VPI increased significantly more ($p \leq .05$) on the planning scale of the CDI than did consistent students. Non-differentiated students gained significantly more ($p \leq .01$) than consistent students. Results on the other two scales of the CDI (resources for exploration, and information and decision-making) and the total CDI score revealed main effects for the consistency and differentiation dimensions which were further differentiated by significant ($p \leq .01$) interaction effects. Specifically, only students who were both inconsistent and non-differentiated showed significant ($p \leq .01$) gains over those achieved by the other theoretical subgroups. Schenk explained that it seemed to take the combined predicted effects of those two dimensions to achieve significant ($p \leq .01$) differences on three out of four vocational maturity scores examined.

Tilden (1976) in his dissertation attempted a cross-validation study of the CDI and a self-designed vocational interview. The participants in the study were 200 college students and the purpose of the research was to test the

expectation that career development follows a monotonic criterion, i.e., as a student's academic grade level increases, so should gains on the CDI scales. Students were partitioned into two groups: career specific (home economics, pre-medicine and accounting majors) and social science and humanities majors, as well as the four college grade levels. The results failed to show systematic increases for the college grade levels for either group, which contrasted findings by Super (1972) that found systematic increases in scores for eighth, tenth, and twelfth graders. Analysis of the findings indicated significant differences ($p \leq .01$) between curricular groups with the career specific group showing in the A and B (Planning and Resources for Exploration) and composite scores over the humanities and social science. Scale A (Planning) did show significant increases ($p \leq .01$) across all four grade levels. Second-year students did register higher scores than first-year on the other scales but the trend did not continue through the third and fourth year (except for planning). Tilden offers several explanations for the findings: (1) a "ceiling effect" may be present, i.e., students in their third and fourth year of college may already be at their highest scoring level on the CDI, (2) the B and C scales of the CDI are not valid because the monotonic criterion has not been satisfied, and (3) career development of college students is discontinuous

because of external influences. Tilden seems to favor the last explanation.

The CDI was also used by Babcock and Kaufman (1976) to determine the effectiveness of career development courses versus walk-in (individual) counseling. The control group comprised individuals receiving no assistance, but expressing a need for career counseling. Only women were studied: 18 participated in the career class, 23 received individual counseling, and 36 served as the control group. The class met once a week for seven weeks, and measurement consisted of Super's CDI and a self-reporting questionnaire developed by Kaufman. The results indicated that the women in the career course scored significantly ($p \leq .01$) higher than those who either received individual counseling or those who served as the control group. The authors conclude that students benefit more from a career course than from walk-in service.

Career Maturity Inventory Studies

Adams (1979) used the Career Maturity Inventory (CMI) in studying the impact of career programs on college freshmen who were undecided about a major. A total of 97 students were randomly assigned to either treatment or control groups. The treatment group met two hours a week for six weeks in a career planning workshop. The results revealed that the students in the treatment group increased their CMI scores significantly ($p \leq .01$) in pre-post-test comparisons. Control

group members remained relatively unchanged. Adams concluded that his particular workshop was a useful procedure to help undecided college freshmen because almost three-quarters of the treatment group versus about one-third of the control group had decided on a major at the end of his program.

Ganster and Lovell (1978) evaluated a career development seminar using the CMI. The seminar consisted of 15 hours of study for the 24 students in the class, as well as a control group. A pre-post-test comparison of CMI scores revealed a significant increase in both the attitudinal ($p \leq .01$) and competency ($p \leq .01$) scales of the CMI for the students in the treatment group. Control group members showed no significant change in score on the CMI. The authors concluded that career development programs similar to the one used in the study can lead to significant gains in career maturity for college students.

Other Studies

Heppner and Krause (1979) studied a career seminar designed to assist students in career planning. The course was developed as a two-credit-hour seminar for students who were undecided/uncertain about their career plans. Population size was not given in the article and the study did not follow procedures of a true experimental design as defined by Kerlinger (1974), but was given in writing, in individual interviews, and verbal feedback in a large group

setting. The reported results of the course were that 100% of the students reported gains in self-awareness, knowledge of the work world, and job-seeking skills, and 89% reported increases in self-confidence. The authors concluded that the course was a success and that more courses of this type should be offered.

Some students have shown no significant gains in career maturity scores as a result of career development programs. Two different approaches in teaching career decision-making, affective and cognitive, were used by Burson (1976) to measure their impact on vocational maturity. The sample ($n=93$) consisted of sorority pledges who were exposed to either two hours of an affective treatment approach or two hours of a cognitive approach. In a post-test design, using only the attitudinal scale of the CMI, Burson's results indicated that neither treatment approach significantly ($p \leq .05$) increased career maturity scores. One may question whether the uncommonly negative findings of this study occurred because of the short (two hours) time of instruction which may not be enough for meaningful change to take place, and because the interest and motivation of the participants may have been affected by their status as sorority pledges.

Davidshofer, Thomas and Preble (1976) describe a group approach to career development for college students ($n=41$) who volunteered for three, one-hour sessions. The Vocational Development Inventory (Crites, 1965) was used

to measure increases in vocational maturity. A control group was used ($n=10$). A pre-post-test design was used with the results indicating no significant increases in gains for the treatment and control groups ($p \leq .05$).

The researchers speculate that the results may be due to the wider variability among experimental groups or the difference of the samples considered. The length of the program may be questioned as to being too brief to effect change.

Concept of Career Decision-Making

Career decision-making has had considerable impetus from the career education movement (Marland, 1972). Super (1980) stresses the importance of career decision-making in career development and Mitchell and Beach (1976) go so far as to state that "the choice of an occupation is one of the most important decisions made by a person during his or her lifetime" (p. 231). Career decision-making has personal and social implications and is perceived by students as important in determining future lifestyles (Rubinton, 1980).

Early theories of decision-making developed from the fields of economics and mathematics (Edwards, 1954, 1961) and emphasized a scientific approach.

Jepson and Dilley (1974), drawing on work done by Bross (1953) and Edwards, Lindman and Phillips (1965), describe decision-making as a process requiring a decision-maker, a decision situation, relevant confirmation from within and outside the person, two or more alternative actions to consider, anticipation of consequences, assessment of probabilities and values, and a commitment to action. Harren (1979) describes decision-making as "a psychological process in which one organizes information, deliberates among alternatives and makes a commitment to a course of action" (p. 119).

A number of career decision-making theories have emerged since emphasis has shifted from an economic-mathematical to a vocational-theoretical orientation. Miller (1974), in her historical approach to career decision-making theories, introduces five significant theories. Tolbert (1974) deals with six different career decision theories. Jepson and Dilley (1974) list eight prominent theories and divide them into two groups - descriptive and prescriptive. Prescriptive models attempt to help people make better decisions by minimizing decision errors (Gelatt, 1962; Kaldor & Zytowski, 1969; Katz, 1963, 1966); descriptive models purport to represent the ways that people make career decisions (Fletcher, 1966; Hilton, 1962; Hsu, 1970; Tiedman & O'Hara, 1963; and Vroom, 1964).

Prescriptive Vocational Decision-Making Models

Gelatt's Career Decision-Making Theory

Gelatt (1962) described a "good" decision as one in which alternatives are considered and in which one accepts responsibility for the consequences of the decision. A decision is viewed and evaluated as a developmental process rather than by its outcome alone. Gelatt proposes a decision-making "framework" derived from Bross' (1953) design for statistical decisions and from Cronbach and Gleser's (1957) description of decision sequences. Information for decisions is organized into three systems: (1) predictive system - knowing alternatives and outcomes and linking action to outcomes; (2) value system - ranking outcomes; and (3) decision criteria or rules for evaluation. A "good" decision includes adequate and relevant information in each system. No specific rules are offered for proceeding from information to commitment.

Kaldor and Zytowski's Theory

Kaldor and Zytowski (1960) used principles of economic decision-making to develop their career decision-making theory in which classes of determinants are specified and their inter-relationships in producing a final choice are described. They imply that decision-making depends upon an individual's estimates of the likelihood of various outcomes combined with consideration of the expense in

time and effort, as well as other personal factors. The concept of decision-making requires alternatives and a criterion for selecting one of them over others. In this context, the alternatives are different kinds of work or occupational opportunities.

Katz's Career Decision-Making Theory

Katz (1963, 1966) differs from other theorists in saying that the starting point in the career decision-making process is the identifying and defining of values rather than the listing of alternatives. He postulates that values are seen as goals to be achieved but are not the motivation for action (Katz, 1963, 1969). The decision-maker develops and rates a list of dominant values. The importance of these values determines their worth and the decision-maker selects the option which has the greatest expected value.

Descriptive Vocational Decision-Making Models

Hilton's Career Decision-Making Theory

The career decision-making theory of Hilton (1962) is based on complex information-processing mechanisms and draws on Simon's work in human problem-solving (Newell, Shaw, and Simon, 1958; Simon, 1955, 1958), on Miller, Galanter and Pribram's (1960) concept of plans, and Festinger's (1957) concept of cognitive dissonance.

Hilton labels his basic concepts as premises, plans and cognitive dissonance. Premises are beliefs and expectations about one's self and the world. Plans are a series of actions associated with entering an occupational role, and cognitive dissonance is a method of testing plans against premises. The decision-making process begins with input that alters the decision-maker's present plans.

Hilton (1962) postulates that the major motivation of career decision-making is a reduction of dissonance among a person's beliefs about himself and his environment. He describes five categories of decision-making models: (1) the attribute-matching model, (2) the need-reduction model, (3) the probable-gain model, (4) the social structure model, and (5) the complex-information-processing model. Hilton's career decision-making theory is based on the complex-information-processing model.

Neither Gelatt nor Hilton relate the decision-making process to the process of vocational development, although both their models imply a connection (Crites, 1969).

Hsu's Career Decision-Making Theory

Hsu (1970) analyzes the decision-making process with a quantitative system in which the vocational goal is the algebraic sum of Valence-Expectancy products of all outcomes for an occupation where the expectancy of each

outcome is unity. In Hsu's theory, the decision-maker is a "system", information about occupation and self is the "input", and occupational choice is the "output".

Vroom's Model of Career Decision-Making

Vroom (1964) outlines a cognitive decision-making model that includes algebraic equations to define his principal concepts: valence, expectancy and force. Valence refers to preferences among outcomes. Expectancy defines the degree to which a decision-maker believes outcomes are probable, and force is the hypothetical cognitive factor that controls behavior and is the product of valence and expectancy and consequently controls which alternative is acted upon.

Fletcher's Model of Career Decision-Making

Fletcher's (1966) model is based on conceptual learning theory. He assumes that career decision-making is done on the basis of one or more basic needs (e.g., Maslow's hierarchy) based on associated career concepts. Career concepts are a composite of one's self-concept, interests and attitudes - all derived from experiences which the decision-maker associates with a given career alternative. The career chosen is the one that elicited the strongest feeling or had the strongest emotional tone.

Tiedeman's Career Decision-Making Theory

Tiedeman and his associates (Miller and Tiedeman, 1972; Tiedeman, 1967; Tiedeman & Miller-Tiedeman, 1975; Tiedeman & O'Hara, 1963) approach career decision-making as a developmental process of differentiation and integration. They view individuals as being responsible for their behavior and capable of choosing through purposeful action. Life confronts the individual with discontinuities and he attempts to re-establish equilibrium by confronting the situation through a process. Effective resolution of each step in the process gradually increases one's sense of control and responsibility for one's behavior, and this in turn leads to further purposeful action.

The process is divided into two periods: anticipation or preoccupation, and implementation and adjustment. These distinguish between behaviors before and after taking action on the decision. The anticipation period is subdivided into four stages representing discrete changes in the condition of the decision: exploration, crystallization, choice, and clarification. The implementation and adjustment phase is subdivided into three steps: induction, reformation and integration.

At any given time, the individual is in one of these seven stages. This condition is ordinarily presumed to be progressive, but the possibility of regression and recycling exists.

Based on the decision-making theories of Tiedeman and his associates, Harren (1966) developed a decision-making instrument, the Vocational Decision-Making Checklist (VDC), which later he revised, extended and retitled Assessment of Career Decision-Making (1976). Harren devised his own career decision-making theory (1979), acknowledging that it was based on the work of Tiedeman and his associates (Harren, 1979).

Harren's Career Decision-Making Theory

Harren's (1979, 1980) career decision-making model is a comprehensive model in that the various components which interact and influence the career decision-making process are all specified. The model owes its heritage primarily to the work of Tiedeman and his associates (Miller & Tiedeman, 1972; Tiedeman, 1961; Tiedeman & O'Hara, 1963); secondly, to the decision-making theory of Janis and Mann (1977) and to the large body of research and theory in the field of cognitive dissonance (Wicklund and Brehm, 1976); thirdly, to the developmental theory of Chickering (1969); and finally, to the self-concept theory of Basset and Harren (cited in Harren, 1979).

The following is an overview of Harren's (1979, 1980) decision-making model. The core of the model is the "process", a four-stage, sequential decision-making process through which a person progresses in making and carrying

out decisions. Movement, ordinarily forward, can be blocked in a given stage, or recycled to an earlier stage. Progression through the stages or recycling depends upon the interpersonal evolution made while carrying out a course of action. If feedback is negative, then it generates a sufficient state of anxiety for an individual to reconsider his/her current course of action. At each stage the person is preoccupied with different concerns or issues and is engaged in different covert and overt behaviors to resolve these issues. The model is intended to apply primarily to undergraduate college students. Table 2.3 presents a summary of the model.

Process

The process component has four stages: awareness, planning, commitment and implementation. The awareness stage is an appraisal of self in the situation. There is an expanded time-perspective; a reflection on past experiences and a consideration of alternatives. Planning is an exploration-crystallization process including clarification of self-concept and assessment of personal values. The commitment stage is an internal, psychological event where an individual tries out decision. If positive feedback is received, then an increased sense of confidence is experienced. If feedback is negative, then the individual may reassess and go back to the planning stage. The onset of

Table 2.3

Harren's Career Decision-Making Theory

Summary of the Model		
Parameters	Constructs	Process
Process	Awareness Planning Commitment Implementation	appraisal of self in situation exploration-crystallization integration with self-concept system: bolstering: action planning success and satisfaction outcomes: Conformity-Autonomy-Interdependence
Characteristics		
Self-Concept:	Identity Self-Esteem	degree of differentiation and integration evaluate aspect: level of satisfaction with self and degree of self-confidence
Style:	Rational Intuitive Dependent	objective deliberation and self-awareness and fantasy emotional self-awareness and fantasy denial of responsibility: projected to others: perception of restricted options
Tasks	Autonomy Interpersonal maturity Sense of purpose	limited need for emotional support: instrumentality: cooperative interdependence tolerance: interpersonal trust: intimacy adjustment to college: educational career and lifestyle planning
Conditions	Interpersonal evaluations Psychological states Immanence Alternatives Consequences Mutuality Support Probability	positive and negative feedback from others level of state anxiety in decision maker: defensive avoidance behaviors under high anxiety amount of time available before implementation number of available different courses of action positive and negative effects on self and others a significant other must codecide emotional and financial support from others decision by others necessary for implementation

Harren, 1979

the implementation stage is determined by environmental circumstances. At this point the decision-maker faces the reality of the consequences of commitment. To the extent that a person has been able to anticipate these consequences in the planning and commitment stages, there is less likelihood that problems will arise during implementation. During implementation the individual carries out the commitment which involves some kind of adjustment or adaptation. There are a number of aspects to this stage: conformity, autonomy and interdependence. An individual may move back and forth through various adjustment solutions or phases.

Characteristics

Two decision-maker characteristics are said to influence the process stage: self-concept and style. Self-concept refers to those vocationally relevant attitudes or traits which the person attributes to self. Two aspects of self-concept are central to the model: identity and self-esteem. Identity refers to the level of differentiation and integration of the self-concept, whereas self-esteem refers to the evaluative aspect of self-concept. Style refers to an individual's characteristic mode of perceiving and responding to decision-making tasks. Three styles are identified: rational, intuitive and dependent. The first two involve whether

or not individuals take responsibility for decision-making, how the individuals approach a decision, how they seek out information, and how they process that information. A complete description of each style has already been discussed in the first chapter of this study and further explanations of decision-making styles are contained in the next section.

Tasks

The third component of the model, tasks, provides a developmental perspective of the decision-maker. Three student development tasks are proposed: autonomy, interpersonal maturity, and sense of purpose. Autonomy involves developing the capacity to be free of the need for emotional support and approval of others. It involves the capacity to be realistically independent. Interpersonal maturity involves developing tolerances, interpersonal trust and intimacy. Sense of purpose involves conscious educational planning, adjustment to college, and identification of lifestyle. Progress in these developmental tasks is a function of how much success the individual has had with previous decision-making situations.

Conditions

The last component of the model, conditions, refers to the immediate and anticipated situational factors

affecting the decision-maker in his/her present psychological state. The four types of conditions are these: interpersonal evaluations, psychological states, task conditions, and context conditions. Interpersonal evaluations refer to positive and negative feedback. Psychological state refers to the level of anxiety aroused as a factor of other conditions and the decision-maker's characteristics. Task conditions refers to three conditions: imminence (amount of time), alternatives, and consequences. Context conditions refers to interpersonal relationships and the role significant others play in the decision-making tasks. The three constructs of the parameter conditions are the following: mutuality (others must co-decide), support (emotional and financial), and probability (decisions by others necessary in implementation).

The fundamental assumption of this model is that progress through the stages of the decision-making process depends upon the characteristics of the decision-maker, the type of decision involved, and the decision-making context. Harren (1979) offers a description of an effective decision-maker.

The person has a moderate to high level of self-esteem which is based upon accurate incorporation of the interpersonal evaluations from others. The self-concept system is realistic (i.e., consistent with others' perceptions), yet flexible and open to new experiences. The person's self-concept is highly differentiated

(i.e., the individual has a clear awareness of her or his interests, values, skills, and other self-attributed traits and is confident in this self-knowledge). At the same time, the self-concept is integrated (i.e., the individual has a relatively stable identity, which results in consistent and purposive behavior). The person takes responsibility for decision-making and relies primarily on a rational style of decision-making. Finally, the person has made considerable progress in accomplishing the three developmental tasks: he or she is both emotionally and instrumentally autonomous, has mature interpersonal relationships, and has developed a sense of purpose. (p. 128).

Decision-Making Style

Decision-making has long been a recognized area of interest in the social sciences (Arroba, 1977) although traditionally the emphasis has been on quantitative aspects of the decision and the decision-making process (Edwards & Tversky, 1967; Jepson and Dilley, 1974; Miller, 1974; Miller & Starr, 1967; Tolbert, 1964). In recent years researchers have explored a particular decision-making style (Arroba, 1977; Dinklage, 1968; Harren, 1979; Lunneborg, 1978; Scherba, 1979).

Decision-making style refers to the manner in which an individual goes about making decisions, i.e., the mode of perceiving and responding to decision-making tasks, and how the individual seeks out and processes information (Harren, 1979). Arroba (1977) concluded that there are few pure types and that the style an individual uses varies depending upon the decision. Decision-making style

is also viewed as a description of behavior, rather than of a person (Arroba, 1977).

A number of programs have been developed to teach career decision-making and to evaluate their impact on decision-making styles (Krimsky-Montague, 1978; Rubinton, 1980). These studies suggest that an individual's decision-making style has an important effect on outcomes of career decision-making programs.

A pioneer in the field of decision-making styles, Dinklage (1968) conducted a study to describe and classify the different types of strategies of eleventh-grade students. Dinklage interviewed students about their thoughts and approaches to educational, vocational and personal decisions. Based on the transcripts of those interviews Dinklage describes eight decision-making strategies: (1) Impulsive - a decision process based on impulse where the decider took the first available alternative; (2) Fatalistic - a strategy where the decider recognizes that a decision needs to be made but leaves the decision up to fate because of the belief that his/her actions do not make much difference; (3) Compliant - the decider complies with someone else's plan for him/her rather than making his/her own decision; (4) Delaying - the strategy used by an individual who recognizes a problem but decides to delay making the decision; (5) Agonizing - a strategy which describes deciders who spend much time

and thought in gathering data and analyzing alternatives only to be overwhelmed by the data which they have accumulated; (6) Planning - a rational strategy in which the decider has chosen some method(s) or alternative(s) for carrying out a decision so that the outcomes will be satisfying; (7) Intuitive - a strategy in which the decider makes a decision based on some internal organization which he/she cannot verbalize but where the decision "feels right"; and (8) Paralysis - the strategy used by the person who accepts responsibility for the decision but is unable to do much about it, i.e. the person believes that something can be done but feels helpless and unsure about how to proceed.

Dinklage's (1968) study indicated that about one-fourth of all reported decisions were being made by a planning strategy. Impulsive and compliant strategies each accounted for 18% of the total number of decisions. Approximately 11% fell into the delaying group and another 10% in the fatalistic category. Agonizing, intuitive and paralysis approaches were used in about 5% to 6% of the time. About one-third of the students did not have a preferred strategy (the same strategy was used on all or two out of three of the decisions). This proportion held up regardless of setting or sex differences.

Harren (1976, 1979, 1980) collapsed Dinklage's (1968) eight decision-making styles into three categories: rational (Planning), intuitive and dependent. Briefly, each style is based on the degree to which a person takes responsibility for his own decisions as opposed to transferring such responsibility to someone or something else and the degree to which the individual uses rational versus emotional strategies in decision-making.

The Assessment of Career Decision-Making Styles (ACDM-S) was developed by Harren (1979) to measure the degree to which an individual uses a rational, intuitive or dependent style of decision-making. This instrument used a number of studies (Krimsky-Montague, 1978; Rubinton, 1980) to evaluate the effects of decision-making style on career decision-making programs, and these authors suggested that they are an important factor in process outcomes. The ACDM-S is one part of a four-part inventory developed by Harren (1979) which assesses career decision-making. The other three parts of the inventory and the history of its development are outlined in chapter three.

Krimsky-Montague (1978) in her dissertation compared two approaches: didactic lectures versus experiential group discussion of career-relevant information and decision-making theory. The purpose of the experiment was to determine if differential treatment would be

helpful in training students who have initially different approaches to decision-making. The results of the study gave no support for differential treatment as measured by the outcome instruments (Barrett's Self-Concept Crystallization Scale (SCS), Osipow's Scale of Vocational Indecision (SVI), and Harren's ACDM-S). Students who were labeled intuitive appeared to be more rational in their decision-making as a result of training. Interestingly enough, rational decision-makers became less decided as measured by the SVI. The study did not mention the effect the treatment had on dependent decision-maker style, and in fact never mentioned that type. The population studied was small ($n=26$), with 18 in the didactic lecture group and eight in the experimental group. There was no control group. These factors are reason for concern about the validity of the study. The SCS scores were significantly different in the two groups, which the researcher felt was due to the small sample size. Finally, the researcher expressed concern about discrepancies in quality of facilitation of the discussion groups which may have affected results.

Rubinton (1980) in her dissertation studied the differential effectiveness of teaching career decision-making and decision-making style on certainty of vocational choice and vocational maturity on college freshmen. The Attitude Scale (AS) of Crite's CMI measured vocational

maturity, Yaegel's Vocational Survey Questionnaire (VSQ) assessed vocational choice and Harren's ACDM-S measured decision-making style.

The treatment groups consisted of: an affective-intuitive approach ($n=30$), a rational-logical approach ($n=30$), an attention-placebo group (orientation class with decision-making component) ($n=30$), and a non-treatment group ($n=30$). Treatment lasted twelve weeks.

The results indicated significant differences ($p \leq .05$) in degree of vocational choice between students in all groups with three times as many students in decided categories of the experimental groups as in the control groups. Results also stressed the significant contribution of decision-making style on vocational maturity.

Rational decision-makers showed a significant ($p \leq .001$) pre-post-test increase in vocational maturity with the rational-logical intervention. Intuitive decision-makers showed a significant increase ($p \leq .05$) with the affective-intuitive intervention. Pre-post-test significant decreases ($p \leq .01$) were found in vocational maturity of dependent decision-makers across all four groups. Rubinton does not explain why the decrease occurred. She suggests that dependent decision-makers need special assistance and perhaps training in changing their decision-making style.

Lunneborg (1978) developed a 166-item questionnaire to test the hypothesis that females showed greater reliance on the intuitive decision-making style and males on the planning (rational) style in making career decisions. Harren's (1976) description of decision-making styles was used as a guide for item construction in her three styles of decision-making: planning, intuitive and dependent. Lunneborg's items referred to general attitudinal preferences for decisions rather than to differences in the way people make specific decisions. She conducted three studies: (1) using 116 college students to whom she administered her instrument, the Career Decision-Making Questionnaire (CDMQ), and Barrett and Tinsley's (1977) Vocational Rating Scale (VRS) as well as Harren's ACDM (college choice) (1976), (2) using 717 high school juniors (324 males, 393 females) to whom she administered the CDMQ, ACDM (occupational choice) (1976) and the Washington Pre-College Test Battery and, (3) using 116 college students (69 females, 47 males) to whom she administered the CDMQ and Super's Work Values Inventory (WVI). The results of all three showed that males and females did not significantly differ in their career decision-making style. Females did not have lower planning scores or higher intuitive scores as hypothesized and both sexes had equal numbers of dependent-style decision-makers. In each of the three studies the intuitive

style had the highest mean score among all three styles for both sexes. Lunneborg reported that the intuitive style was not significantly correlated with any of the VRS scales or the WVI which led her to conclude that the intuitive style is not an effective mode of making career decisions. She also questioned the use of fantasy, attention to present feelings and emotional self-awareness in value clarification exercises used in most programs. This assertion somewhat conflicts with Rubinton's (1980) findings that intuitive decision-makers responded better to an intuitive approach to career decision-making. This may be due to differences in measuring instruments and treatment approaches.

Arroba (1977) proposed six decision-making styles: (1) logical, (2) hesitant, (3) intuitive, (4) emotional, (5) no thought, and (6) compliant. She interviewed 64 individuals of various ages and occupations and collected detailed information regarding eight decisions the individuals had made. Four aspects of each decision were explored: (1) time devoted to it, (2) amount of consideration given, (3) subjective feelings, and (4) degree of hesitancy, if any. Analysis of the results of her interviews indicated three main groups: (1) logical and hesitant, (2) intuitive and emotional, and (3) no thought and compliant. This breakdown into categories was done to gain further information about the underlying factors

involved in decision-making. The three groups were seen to be characterized by the varying amount of personal consideration and effort involved in the decision as well as the amount of objectivity displayed. She also reported that each individual possessed a repertoire of styles with 71.9% using four or five of the six styles in their decisions. She concluded that people are not only capable of a variety of approaches to decisions but also practice various styles depending on the nature of the decision. No investigation into the effectiveness of the styles was made.

Scherba (1979) in his dissertation explored the relationship of decision-making style to satisfaction with the decision. The purpose of the study was to discover how the thoughts and actions of community college students ($n=255$) related to their satisfaction with the outcomes of their decisions. He developed a Decision-Making Questionnaire (DMQ) to measure the actions and thoughts which represented five different decision-making styles: rational, impulsive, intuitive, dependent and fatalistic. Style inferences were derived from self-reports of the way in which five previous decisions were made, three career-related (choosing a job, a college, and an elective class) and two decisions which were not career-related (choosing a movie and a major purchase). Subjects were also asked to rate on a 10-point

scale (1) the importance of each decision, (2) their confidence in the correctness of the decision prior to experiencing the outcome, (3) their decision satisfaction soon after experiencing the outcome, and (4) their current decision satisfaction. Results indicate that there was not a consistent pattern of correlation since no composite of style of decision-making behavior or individual thought or action correlated significantly (positively or negatively) with the ratings of decision satisfaction, importance and confidence of the decisions across all decision situations. The magnitude of the correlation coefficients varied with the individual decision situation and was not consistent for either the career or non-career decision situations.

Summary

Various studies were reviewed to establish a body of knowledge about career maturity, career maturity measurement, career development, career decision-making and decision-making style. The results of the present study will provide data on the effects of a career development course on career maturity and will evaluate the impact of decision-making style on outcomes. This information could be helpful in determining the effects of career development courses.

Career development theories like those of Parsons (1909) and Hull (1928) have moved over the years from a trait-factor approach, where a matching of an individual's abilities and interest with vocational opportunities was favored, to those like Super's (1957, 1974) which place an emphasis on career development as an ongoing process integrated into human development. Career maturity grew out of emphasis on career development theory and refers to the various behavioral dimensions along which one progresses vocationally. Studies by Super and Overstreet (1960) generated most of the indexes developed to measure the construct of vocational maturity. Super's Career Development Inventory, based on those studies of vocational maturity, was chosen for this study.

Career development programs like Schenk (1976), Adams (1979), Ganster and Lovell (1978), have been used successfully with college students for years. However, a literature review shows that only a few studies have attempted to assess the effects of career development programs on vocational maturity. The literature indicates that programs that meet for at least seven hours show increased gains in measures of career maturity versus those that last three hours or less. Furthermore, a literature search reveals no studies that assess the impact on career maturity of a course which meets for as long as thirty hours. The longest evaluated course was

only 15 hours, emphasizing the lack of empirical data that the present study will address.

A central component of the career development process is the ability to make decisions. Studies reveal that individuals use various decision-making styles and that the style of decision-making may have an effect on outcomes. No studies could be found that explored the effect of a career development course on career maturity and decision-making style as the present has attempted.

CHAPTER III

METHOD

The present investigation was designed to study the effects of a career education course on the career maturity of students with various decision-making styles. In this chapter, participants and setting for the study are identified and discussed, as well as the background and the statistical properties of the measurement instruments used are presented. The content of the course used as a treatment is outlined, and the method of data analysis is described.

Design of the Study

The design of the experiment was a pre-post comparison of increases in vocational maturity (as measured by the CDI) between students with various styles of decision-making who took a career education course versus similar students who did not receive the experimental treatment. Means for pre and post-test Career Development Inventory (CDI) are summarized in Table 3.1.

Table 3.1: Pre and post-test means for the scales of the CDI

Group	Test	n	Scale A	Scale B	Scale C	Scale D	Scale E
Treatment	Pre	64	57.1	178.8	13.9	14.9	20.7
	Post	64	74.1	200.3	14.5	15.2	21.2
Control	Pre	88	70.1	185.2	13.0	14.2	21.1
	Post	88	76.1	187.1	18.8	14.7	20.4

Data Analysis

Administration of pre- and post-testing was accomplished during the first and last sessions of the intervention, respectively. ACDM-S, CDI, and coded demographic characteristics of the subjects were transferred to computer cards. Analyses of the data were performed through use of commercial computer programs available through the computer services of Virginia Tech.

A two-way analysis of covariance was performed to estimate the effects of style and decision-making and treatment. Selected demographic information, e. g., sex and age, was collected and analyzed to compare differences between the treatment and control groups. An alpha level of .05 was established for all statistical analysis.

Population

This study was conducted at Northern Virginia Community College (NVCC) which serves the counties of Arlington, Fairfax, Loudoun and Prince William as well as cities of Alexandria, Falls Church, Fairfax, and Manassas Park. This jurisdiction, which is part of the Washington, D. C. metropolitan area, has a population of more than one million and is the most affluent area in the Commonwealth of Virginia (Knapp & Scott, 1979).

NVCC is the largest institution of higher education in the state of Virginia and serves a student population of more than 34,000 at five separate campuses in the suburban Washington area. All five campuses offer courses leading to Associate in Arts and Associate in Science degrees as well as occupational/technical courses leading to an Associate in Applied Science degree in many specialized areas.

Students from the Annandale and Alexandria campuses of NVCC were included in this study. Career development courses have been taught at both campuses for several years under the titles "Career Education" at Annandale and "Psychology of Personality" at Alexandria. Two to four sections of each course are offered at each campus every academic quarter, and although titled differently, these courses have the same content and are taught the same way at both campuses.

Participants

Both the treatment and control groups expressed an interest and need for a career development course. The treatment group registered for a career education course (GENL 108 or PSYC 119). The control group consisted of students in orientation classes (GENL 100) who, after hearing the course content and objectives of the career development course explained by the orientation instructor,

agreed to take the measuring instruments in the same way as the treatment group. The orientation class did not cover career development. There was no randomization of groups and both groups took the CDI and Assessment of Decision-Making-Style (ASDM-S) prior to treatment and the CDI after ten weeks (time of the treatment). Both groups signed permission forms to allow the collected data to be used in the study. Demographic information was collected with the ASDM-S on the subjects to assess similarity of age and sex between groups. An F-test was used to determine if these variables between groups were similar. All participants in the study were given an opportunity to discuss the results of the measurement after the study was completed.

Instrumentation

The two instruments employed in this study were the Career Development Inventory (CDI) College Form IV, and the Assessment of Career Decision-Making Styles (ACDM-S).

The CDI is an objective, multifactor, paper and pencil inventory measuring the vocational maturity of college-age men and women. The inventory comprises five scales and yields five scores, two attitudinal, and three cognitive. Scale A, Planning Orientation (attitudinal), is a 30-item, self-rating scale which represents the degree of informed planfulness (concerns about choice, specificity of planning,

and self-estimated amount of occupational information). Scale B, Resources for Exploration (attitudinal), consists of 10 items and is another self-rating scale which assesses the "quality of the actually used and potentially useable resources for career (educational and vocational) exploration," (Super & Forrest, 1972, p. 5). Scale C, Information and Decision-Making (cognitive), is a 20-item scale which measures an individual's actual occupational information and his/her knowledge about educational-vocational decisions. Scale D, World of Work Information (cognitive), consists of 20 items which assess how much a student knows about choosing a career, entering and advancing in a field of work. Scale E, Knowledge of the Preferred Occupational Group (cognitive), consists of 40 items which compare what each student knows about the occupation and groups of related occupations which he or she said, in the CDI, is of greatest interest to him or her. It covers education and training requirements, what people do at work in the chosen group of occupations, the characteristics that are related to success and satisfaction, and its life-style (Super & Thompson, 1979).

Reliability

The reliability of the CDI, Form III, has been estimated by the test-retest method with male and female tenth graders ($n=82$) as: .85 and .82 respectively, for

the two attitudinal scales, A and B, and .72 for the cognitive scale, C, and; .87 for the composite scale (Super & Forrest, 1972). Tilden (1976) reported test-retest reliability coefficients of .97 for scale A, .86 for scale B, .73 for scale C and a composite score of .93 when the CDI was given to college students.

Validity

Super and Forrest (1972) indicate that the CDI was designed to have content, criterion and construct validity. The content validity of the CDI was established by expert judgement as the test items are based on a factor analysis of the "Career Pattern Study" (Super & Overstreet, 1960), the most comprehensive study of vocational maturity and career choice process performed to date. The CDI is grounded on accepted theory of career development and the scales are empirically refined (Tilden, 1976).

Conclusive support for criterion and predictive validity for the CDI is unavailable until longitudinal studies can be performed comparing vocational maturity scores related to external variables. However, Forrest's 1972 study (Appendix E) in which vocational maturity was found to increase with high school groups (8th, 10th & 12th grades) provides some validating evidence since a developmental variable might be expected to increase with age. Cross-validation studies with an interview designed

by Tilden (1976) with college students ($n=40$), provided significant correlations ($p \leq .01$) for scales A and B of the CDI, but scale C showed no significant correlation with the interview rating scale constructed by Tilden. Possible explanations of these findings are discussed in Chapter II. Tilden (1976) reports that Super and Forrest (1972) compared scores derived from other instruments and found correlations with Gribbons and Lohnes (1968) Readiness for Career Planning Scales, .74 ($p \leq .01$) for scale A, .67 ($p \leq .01$) for scale B, .61 ($p \leq .01$) for scale C, and the composite .75 ($p \leq .01$). The CDI was correlated with the Cognitive Vocational Maturity Test (Westbrook & Clary, 1967 - cited in Super & Forrest, 1972) and results indicated that scales A and B of the CDI were not significantly correlated ($p \leq .05$), while scale C was significantly correlated ($p \leq .05$). Tilden (1976) did not report the composite score correlation.

Sex Differences

Forrest (1972) reports that in his validation study with high school students there were no significant differences in the means and variance between males and females on any of the scales. The authors of the CDI strove to make the instrument free of any sex bias (Tilden, 1976).

Assessment of Career Decision-Making (ACDM)

Harren's (1979) ACDM was developed as an extension of an earlier instrument, the Vocational Decision-Making Checklist (VDC), also developed and designed by Harren (1965, 1966) to study construct validity for Tiedeman and O'Hara's (1963) decision-making paradigm. The ACDM is a self-administered and self-scored questionnaire that takes approximately half an hour to complete.

The ACDM is made up of four different scales: ACDM-Styles Scale-ACDM-S; ACDM-College Scale-ACDM-C; ACDM-Major Scale-ACDM-M; ACDM-Occupational Scale-ACDM-O.

Respectively it purports to evaluate decision-making style, feelings about being in college, feelings about a chosen academic major, and feelings about future occupational plans.

The scale used in this study is the ACDM-S (styles scale) (included in the Appendix A) which contains 30 true/false questions to determine the degree an individual uses a Rational, Intuitive or Dependent style. The ACDM-S, based on a model of career decision-making developed by Harren (1979), consists of four interrelated parameters: Process, Characteristics, Tasks and Conditions. Within each parameter are a number of constructs and processes (these are reviewed in chapter II). The rational style is characterized by the ability to recognize the consequences of earlier decisions on later ones. The individual

anticipates the need to make decisions in the future and prepares for them by seeking information about self and the anticipated situation. The individual's decisions are carried through deliberately and logically. This style represents the ideal of the self-actualized decision-maker. The intuitive decision-maker also accepts responsibility for decision-making, but shows little anticipation of the future, information-seeking behavior or logical weighing of factors. Rather, this style is characterized by the use of fantasy and emotional attention to their present feelings as the basis for decision-making. Many times the individual cannot state explicitly how he or she made the decision. Therefore, this style is less likely to result in effective decision-making than the rational style because of fluctuations over time in an individual's internal state and because of limitations in the capacity to represent accurately an unknown situation in fantasy.

The major differences between the dependent style and the preceding two styles is that it is characterized by a denial of personal responsibility for decision-making. The individual projects this responsibility on to authorities and peers and is heavily influenced by their expectations and desires. The dependent decision-maker tends to be passive and compliant and have a high need for social approval. This person also perceives the

environment as providing quite limited options. This style is likely to result in a lack of fulfillment of personal satisfaction.

The three styles are considered to be relatively independent, that is, most students will tend to rely on one of the styles more than the other two. Empirically, studies show that these scales are virtually uncorrelated with each other (Harren, 1980).

Harren, 1980, points out that empirical data indicates that the rational style is positively correlated with other scales of the ACDM scores, while the intuitive and dependent styles have low negative correlations with other ACDM scores. Therefore individuals using a rational decision-making style tend to be more advanced in the decision-making process. This suggests that rational decision-makers would progress, because of their more rational strategies and skills, more efficiently through a career decision-making process than the other two styles. On the other hand, intuitive decision-makers may respond better to more internally focused approaches such as values clarification exercises and future job fantasies. Dependent decision-makers may need special approaches to make them more effective in such programs.

Although research utilizing the ACDM-S has been limited because of the newness of the instrument, the following two studies have led evaluators to conclude

that these scales are relatively stable. Prediger (cited in Rubinton, 1980), conducted a correlational study with 232 eleventh grade students in a comprehensive, four-year, suburban midwest high school. He utilized the ACDM and several other major instruments designed to assess various aspects of career development and decision-making. The internal consistency estimates of reliability for this study were .72 for the rational style, .60 for the intuitive style, and .69 for the dependent style.

Harren, et al., (1978) sampled undergraduates of a midwestern university ($n=73$) who took the ACDM-S twice over a two-week interval. The test-retest reliability for the three decision-making styles was: .85 for the rational, .76 for the intuitive, and .86 for the dependent.

Because of the limited amount of reliability and validity scores shown by these studies, a KR-20 and a factor analysis of the items comprising the ACDM-S will be conducted.

Identification of Decision-Making Styles

The inventory, Assessment of Career Decision-Making Styles (ACDM-S) (Harren, 1979), was used at the beginning of the treatment to identify the decision-making style of the members of the treatment and control groups. A score above five on a particular style and at least two

points higher than the next score determined an individual's decision-making style. A discriminate analysis will be conducted to assess the classification of decision-making style.

Treatment Procedure

Treatment for the experimental groups consisted of a ten-week career education course offered at Northern Virginia Community College. The course is titled "Career Education" at the Annandale campus and "Psychology of Personality" at the Alexandria campus. The day sections of the course met for one and a half hours twice a week, three hours once a week and the evening sections met for three hours once a week. Total meeting time for each section was thirty hours. Students were required to attend all of the class sessions or to make up any missed assignments on their own time.

Professional counselors employed by Northern Virginia Community College served as facilitators of the classes. Each counselor had several years of teaching experience, knowledge of the career development process, and at least a master's degree in counseling. All instructors volunteered to teach the course.

Prior to the initiation of the study each class instructor was made familiar with the research proposal in a general manner. An in-service meeting was held

where course content, teaching techniques (e. g., group process, interview approaches, exercises to be used), order of presentation, and testing procedures were reviewed. All instructors followed the course syllabus (Appendix C) and used a checkoff sheet (Appendix D) so that continuity of treatment would be maximized. Course structure and procedure were emphasized; details of measurement were not. Pre-test scores were not revealed so as to minimize experimenter bias. The researcher spent approximately three hours orienting the facilitators who were all enthusiastic and supportive of the study. The investigator coordinated the study and did not teach any of the treatment classes.

The career education course corresponds to, and builds on, the content area covered in the Guided Career Exploration (GCE) developed by Super and Harris-Bowlsby (1979) to impact on career development of high school students. The course also meets the researched needs and interests of college students in career planning reported by Ard and Hyder (1978).

Content areas covered in the career education course are career life planning, work attitudes, decision-making, career information, evaluation of skills, abilities and interests, values clarification, informational and employment interviewing, resume writing and other related areas approximately in that order.

Hypotheses

Hypotheses tested in this study are presented below in the null form:

Hypothesis I: The ACDM-S does not produce significant independent classification of decision-making style.

Hypothesis II: The students who participated in the treatment did not increase significantly on pre-post-test scores on the CDI scale A, over students who did not receive treatment.

a. There is no significant difference in CDI scale A scores and type of decision-making style as measured by the ACDM-S.

b. There is no significant interaction effect between CDI scale A and decision-making style for students who received treatment.

Hypothesis III: The students who participated in the treatment did not increase significantly on pre-post-test scores on the CDI scale B over students who did not receive treatment.

a. There is no significant difference in CDI scale B scores and type of decision-making style as measured by the ACDM-S.

b. There is no significant interaction effect between CDI scale B and decision-making style for students who received treatment.

Hypothesis IV: The students who participated in the treatment did not increase significantly on pre-post-test scores on the CDI scale C over students who did not receive treatment.

a. There is no significant difference in CDI scale C scores and type of decision-making style as measured by the ACDM-S.

- b. There is no significant interaction effect between CDI scale C and decision-making style for students who received treatment.

Hypothesis V: The students who participated in the treatment did not increase significantly on pre-post-test scores on the CDI scale D over students who did not receive treatment.

- a. There is no significant difference in CDI scale D scores and type of decision-making style as measured by the ACDM-S.
- b. There is no significant interaction effect between CDI scale D and decision-making style for students who received treatment.

Hypothesis VI: The students who participated in the treatment did not increase significantly on pre-post-test scores on the CDI scale E over students who did not receive treatment.

- a. There is no significant difference in CDI scale E scores and type of decision-making style as measured by the ACDM-S.
- b. There is no significant interaction effect between CDI scale E and decision-making style for students who received treatment.

Summary

Of interest in this study was the interaction of decision-making styles and the treatment of a career education course given to community college students. Five sections of the course met for three hours for a period of ten weeks. Subjects were self-selected and the control group consisted of students who expressed an interest in or need for such a course. Both treatment

and control groups were pre-tested during the first week of treatment with the CDI to determine level of career maturity and with the ACDM-S to determine decision-making style. The groups were also given demographic questionnaires to determine differences in control and treatment groups. Post-testing was completed the last week of the study using the CDI to determine levels of career maturity. Change was conceptualized in terms of post minus pre differences on the five measures of the CDI. Following the discovery of significant F-values, a two-way analysis of covariance, using mean comparison, was performed.

CHAPTER IV

RESULTS OF THE STUDY

This chapter reports characteristics of the subjects in this study, results of pre-post-testing, and post-experimental descriptive information. The hypotheses presented in Chapter III are restated and data relating to each is presented.

Subject Characteristics

One hundred fifty-two students participated in this study; sixty-four were enrolled in five sections of a career education class and eighty-eight were enrolled in four sections of an orientation class. All classes met in the Winter 1981 quarter. Table 4.1 compares the characteristics of students in the treatment and control groups. There are more than twice the number of males (\underline{n} -45) in the control group than in the treatment group (\underline{n} =20), and the mean age of 21.9 years for females in the treatment group differs substantially from the mean of 43 years for females in the control group. These differences between groups were controlled for in this study by making covariates of age, sex

Table 4:1 Characteristics of Students

	<u>Treatment Group</u>				<u>Control Group</u>			
	n	%	X age	S.D.	n	%	X age	S.D.
Sex								
Males	20	(31%)	24.8	7.5	45	(51%)	21.9	5.6
Females	45	(51%)	21.9	5.6	43	(48%)	43	8.6
Total	65				88			

and pre-test in the analysis of covariance (ANCOVA).

Decision-making Style

Classification of subjects according to a particular style of decision-making was based on Assessment of Career Decision-making Styles (ACDM-S). Since no formal method of classifying decision makers was suggested in the literature, it was decided to classify students by their highest style score if it was two points higher than their next highest score. Those who did not have one score two points higher than any other were considered as having no dominant style of decision-making. Table 4.2 presents a breakdown of distribution of decision-making style across treatment and control groups.

Hypothesis Testing

Hypothesis 1: The ACDM-S does not produce significant independent classification of decision-making style.

A discriminate analysis of the ACDM-S was calculated by assessing the student inventory answers on the various decision-making styles with classification which would have been assigned by the discriminate analysis package in the Statistical Package for the Social Sciences (SPSS) (Nie, Hull, Jenkins, Steinbrenner & Brent, 1975). Table 4.3 indicates a comparison between the SPSS assignment and the

Table 4.2: Frequencies of Subjects by
Classification and Treatment and Control Group Assignments

	Rational Decision- makers		Intuitive Decision- makers		Dependent Decision- makers		No dominant style of Decision-making	
Group	n	% of total	n	% of total	n	% of total	n	% of total
Treatment	23	35.9%	14	21.9%	7	10.9%	20	31.3%
Control	52	59.1%	13	14.8%	6	6.8%	17	9.3%

Table 4.3: Discriminant Analysis of Subjects Across Decision-making Styles

ACTUAL GROUP	NO. OF CASES	PREDICTED GROUP MEMBERSHIP			
		Rational	Intuitive	Dependent	No Dominant Style
Rational Decision makers	128	118 92.2%	0 0.0%	1 0.8%	9 7.0%
Intuitive Decision makers	45	2 4.4%	37 82.2%	1 2.2%	5 11.1%
Dependent Decision makers	17	0 0.0%	1 5.9%	15 88.2%	1 5.9%
No Dominant Style of Decision- Making	53	4 7.5%	9 17.0%	5 9.4%	35 66.0%
Ungrouped Cases	4	0 0.0%	1 25.0%	0 0.0%	3 75.0%
Total		<u>124</u>	<u>48</u>	<u>22</u>	<u>53</u>

PERCENT OF "GROUPED" CASES CORRECTLY CLASSIFIED: 84.36%

classifications actually used in this study. As may be seen there is a high similarity between the two classifications with 84.36 percent agreement.

A reliability estimate of the ACDM-S was computed using the Kuder-Richardson Formula (KR-20) in SPSS. The KR-20 procedure is a measure of internal consistency and estimates reliability by determining how each item on a test relates to all other items and to the test as a whole. The results are reported in Table 4.4, by sex, to determine if there is a difference in reliability across classification. The results reveal that all questions, regardless of the participants' sex, have acceptable levels of internal consistency. The ACDM-S questions appear in Appendix A.

A factor analysis (VARIMAX Rotation) was used to validate the instrument through the forcing of the items of the ACDM-S inventory into three factors. These factors were then compared to the three components described in the literature. The results are reported on Table 4.5 and reveal rational items to be heavily loaded with factor 1, dependent items heavily loaded with factor 2, and intuitive items heavily loaded with factor 3. The factor score coefficients are congruent with the component descriptions with the exception of question 26, which is an intuitive style question. Since this question fails to load

Table 4.4: Reliability Estimates (KR-20) of the
ACDM-S Classification Sub-test by Sex of Subjects

	<u>Males</u>	<u>Females</u>
Rational Questions	0.794	0.815
Intuitive Questions	0.593	0.602
Dependent Questions	0.725	0.797

Table 4.5: Factor Score Coefficients for ACDM-S Items

	FACTOR 1	FACTOR 2	FACTOR 3
ITEM 1	0.11200	-0.00769	0.06222
ITEM 2	-0.02219	0.01673	0.09842
ITEM 3	0.04307	0.15084	0.08473
ITEM 4	0.15189	0.04131	0.06987
ITEM 5	-0.04289	-0.03727	0.13176
ITEM 6	0.00164	0.04876	-0.00176
ITEM 7	0.09307	-0.01871	0.02853
ITEM 8	-0.01039	-0.00238	0.13053
ITEM 9	-0.00465	0.13110	-0.02051
ITEM 10	0.17382	0.02323	-0.04740
ITEM 11	-0.10085	0.02399	0.05580
ITEM 12	-0.02216	0.11594	-0.04277
ITEM 13	0.13146	0.00902	0.04226
ITEM 14	-0.03970	0.00592	0.10398
ITEM 15	0.03871	0.07084	-0.01159
ITEM 16	0.13611	0.02321	0.00811
ITEM 17	0.03275	0.01271	0.06384
ITEM 18	0.07135	0.08534	-0.09405
ITEM 19	0.15041	0.02077	0.10821
ITEM 20	-0.02460	0.02642	0.11718
ITEM 21	0.06023	0.20012	0.03325
ITEM 22	0.09909	0.04037	-0.14437
ITEM 23	0.06394	-0.07285	0.39133
ITEM 24	-0.00928	0.04645	0.01349
ITEM 25	0.07304	-0.03808	0.08934
ITEM 26	-0.04631	0.03317	0.00172
ITEM 27	0.00014	0.16900	0.04911
ITEM 28	0.11322	0.03890	-0.00435
ITEM 29	0.03492	0.01356	0.18830
ITEM 30	0.05610	0.29564	0.03995

sufficiently on any component, it was decided that the item should be discarded.

The discriminate analysis, reliability estimates and the factor analysis provide evidence that the ACDM-S does produce independent classification of subjects. Hence the null hypothesis was rejected.

A simple analysis of change from pre-test to post-test does not ensure that initial differences between the two groups are taken into account. The appropriate test is the more conservative analysis of covariance (ANCOVA) with pre-test, age and sex used as covariates with the post-test scores as the criterion (Kerlinger, 1973). The ANCOVA controls for pre-test differences adjusts post-test scores.

Testing for homogeneity of regression coefficients of groups across the covariates of pre-test, age and sex was performed to establish the appropriateness of the ANCOVA model. This procedure was done using the Statistical Analysis System (SAS) outlined in the SAS User's Guide (Helwig & Council, 1979) and revealed only one of the fifteen interactions was significant at the five percent alpha level. Sex across groups in pre-test D was found to possess a significant interaction ($p \leq .0458$). Because only one of the 15 interactions was significant and since this level of significance was very close to the pre-specified alpha level, the covariate sex was retained across all

analyses as a covariate. This decision was based upon the rationale that uniformity of analytic design was more important to the integration of the results than was the single violation of one assumption within one analysis.

Hypothesis II: The students who participated in the treatment did not increase significantly on pre-post-test scores on the CDI scale A, over students who did not receive treatment.

- a. There is no significant difference in CDI scale A scores and type of decision-making style as measured on the ACDM-S.
- b. There is no significant interaction effect between CDI scale A and decision-making style for students who received treatment.

Table 4.6 shows there is not a significant main effect for group and style at the assumed alpha level ($p \leq .05$). There is however, a significant interaction effect between these two variables ($p \leq .01$). This result indicates that the outcomes of scale A (Planning Orientation) on the CDI were not uniform across the various decision-making styles. A one-way analysis of variance was performed using the Tukey's B method. This comparison revealed that the rational decision makers' scores in the treatment group were greater than those in the control group, while for the intuitive, dependent and no dominant classification, the control group means were greater than the treatment group means, therefore providing the observed interaction between groups and classifications.

The results revealed in Table 4.6 indicate no significant main effects for group and style at the ($p \leq .05$) level,

Table 4.6: Analysis of the Covariance of Scale A by
Group and Style with Pre-test, Age and Sex as Covariates

SOURCE OF VARIATION	SUM OF SQUARES	DF	MEAN SQUARE	F	SIGNIF OF F
COVARIATES	8956.383	3	2985.461	27.313	0.000
Pre-test 1	7859.043	1	7859.043	71.899	0.000
Age	1226.361	1	1226.361	11.219	0.001
Sex	51.632	1	51.632	0.472	0.493
MAIN EFFECTS	940.660	4	235.165	2.151	0.078
Group	385.520	1	385.520	3.527	0.062
Style	639.812	3	213.271	1.951	0.124
2-WAY INTERACTIONS	1262.934	3	420.978	3.851	0.011
Group Style	1262.935	3	420.978	3.851	0.011
EXPLAINED	11159.977	10	1115.998	10.210	0.000
RESIDUAL	15412.188	141	109.306		
TOTAL	26572.164	151	175.075		

COVARIATE RAW REGRESSION COEFFICIENT

Pre-test 1	0.436
Age	0.387
Sex	1.187

Table 4.7: Analysis of the Covariance of Scale B by
Group and Style with Pre-test, Age and Sex as Covariates

SOURCE OF VARIATION	SUM OF SQUARES	DF	MEAN SQUARE	F	SIGNIF OF F
COVARIATES	28627.070	3	9542.355	10.703	0.000
Pre-test 2	26041.844	1	26041.844	29.208	0.000
Age	3408.102	1	3408.102	3.822	0.053
Sex	140.217	1	140.217	0.157	0.692
MAIN EFFECTS	12514.941	4	3128.735	3.509	0.009
Group	10703.656	1	10703.656	12.005	0.001
Style	4151.109	3	1383.703	1.552	0.204
2-WAY INTERACTIONS	2636.234	3	878.745	0.986	0.402
Group Style	2636.234	3	878.744	0.986	0.402
EXPLAINED	43778.250	10	4377.824	4.910	0.000
RESIDUAL	125715.313	141	891.598		
TOTAL	169493.563	151	1122.474		

COVARIATE	RAW REGRESSION COEFFICIENT
Pre-test 2	0.513
Age	0.646
Sex	1.957

Table 4.8: Analysis of the Covariance of Scale C by
Group and Style with Pre-test, Age and Sex as Covariates

SOURCE OF VARIATION	SUM OF SQUARES	DF	MEAN SQUARE	F	SIGNIF OF F
COVARIATES	650.018	3	216.673	39.833	0.000
Pre-test 3	485.090	1	485.090	89.178	0.000
Age	2.330	1	2.330	0.428	0.514
Sex	50.326	1	50.326	9.326	0.003
MAIN EFFECTS	21.654	4	5.414	0.995	0.412
Group	1.968	1	1.968	0.362	0.548
Style	20.775	3	6.925	1.273	0.286
2-WAY INTERACTIONS	14.701	3	4.900	0.901	0.443
Group Style	14.701	3	4.900	0.901	0.443
EXPLAINED	686.374	10	68.637	12.618	0.000
RESIDUAL	766.979	141	5.440		
TOTAL	1453.353	151	9.625		

COVARIATE	RAW REGRESSION COEFFICIENT
Pre-test 3	0.565
Age	0.017
Sex	1.189

Table 4.9: Analysis of the Covariance of Scale D by
Group and Style with Pre-test, Age and Sex as Covariates

SOURCE OF VARIATION	SUM OF SQUARES	DF	MEAN SQUARE	F	SIGNIF OF F
COVARIATES	630.823	3	210.274	27.475	0.000
Pre-test 4	428.829	1	428.829	56.032	0.000
Age	49.876	1	49.876	6.517	0.012
Sex	7.374	1	7.374	0.963	0.328
MAIN EFFECTS	26.828	4	6.707	0.876	0.480
Group	1.440	1	1.440	0.188	0.665
Style	24.920	3	8.307	1.085	0.357
2-WAY INTERACTIONS	6.562	3	2.187	0.286	0.836
Group Style	6.562	3	2.187	0.286	0.836
EXPLAINED	664.212	10	66.421	8.679	0.000
RESIDUAL	1079.114	141	7.653		
TOTAL	1743.326	151	11.545		

COVARIATE	RAW REGRESSION COEFFICIENT
Pre-test 4	0.500
Age	0.080
Sex	0.458

Table 4.10: Analysis of the Covariance of Scale E by
Group and Style with Pre-test, Age and Sex as Covariates

SOURCE OF VARIATION	SUM OF SQUARES	DF	MEAN SQUARE	F	SIGNIF OF F
COVARIATES	789.211	3	263.070	21.622	0.000
Pre-test 5	742.715	1	742.715	61.043	0.000
Age	2.226	1	2.226	0.183	0.669
Sex	3.655	1	3.655	0.300	0.584
MAIN EFFECTS	52.367	4	13.092	1.076	0.371
Group	32.834	1	32.934	2.699	0.103
Style	23.457	3	7.819	0.643	0.589
2-WAY INTERACTIONS	39.358	3	13.119	1.078	0.360
Group Style	39.358	3	13.119	1.078	0.360
EXPLAINED	880.937	10	88.094	7.240	0.000
RESIDUAL	1715.548	141	12.167		
TOTAL	2596.485	151	17.195		

COVARIATE	RAW REGRESSION COEFFICIENT
Pre-test 5	0.476
Age	0.017
Sex	0.316

leading to failure to support the main null hypothesis II and the sub-hypothesis A. The significant ($p \leq .05$) interaction effect found between treatment groups and classifications requires rejection of the null sub-hypothesis and acceptance of the alternative hypothesis that the career course implementation does increase performance on Scale B of the CDI.

Hypothesis III: The students who participated in the treatment did not increase significantly on pre-post-test scores on the CDI scale B over students who did not receive treatment.

- a. There is no significant difference in CDI scale B scores and type of decision-making style as measured by the ACDM-S.
- b. There is no significant interaction effect between CDI scale B and decision-making style for students who received treatment.

The data presented in Table 4.7 reveals that there is a significant ($p \leq .001$) main effect for groups, no significant ($p \leq .05$) main effect for styles and no significant ($p \leq .05$) interaction between groups and styles on CDI scale B. The results require the rejection of the null hypothesis III and the acceptance of the alternative hypothesis that the career education course does increase performance on scale B (Resources for Exploration) of the CDI. The results provide no evidence to support the rejection of sub-hypothesis A and B at the assumed alpha level of five percent.

Hypothesis IV: The students who participated in the treatment did not increase significantly on pre-post-test scores on the CDI scale C over students who did not receive treatment.

- a. There is no significant difference in CDI scale C scores and type of decision-making style as measured by the ACDM-S.

- b. There is no significant interaction effect between CDI scale C and decision-making style for students who received treatment.

The data presented in Table 4.8 reveal that there are no significant ($p \leq .05$) main effects for group and style, as well as no significant ($p \leq .05$) interaction between decision-making style and CDI scale C (Career Decision-making) treatment score. The results do not provide bases to reject null hypothesis IV as well as sub-hypotheses A and B.

Hypothesis V: The students who participated in the treatment did not increase significantly on pre-post-test scores on the CDI scale D over students who did not receive treatment.

- a. There is no significant difference in CDI scale D scores and type of decision-making style as measured by the ACDM-S.
- b. There is no significant interaction effect between CDI scale D and decision-making style for students who received treatment.

The data presented in Table 4.9 reveals that there are no significant ($p \leq .05$) main effects for group and style, as well as significant interaction between decision-making style and CDI scale D (World-of-Work Information) treatment. The results do not provide bases to reject null hypothesis V as well as null sub-hypotheses A and B.

Hypothesis VI: The students who participated in the treatment did not increase significantly on pre-post-test scores on the CDI scale E over students who did not receive treatment.

- a. There is no significant difference in CDI scale E scores and type of decision-making style as measured by the ACDM-S.

- b. There is no significant interaction effect between CDI scale E and decision-making style for students who received treatment.

The data presented in Table 4.10 reveals that there are no significant ($p \leq .05$) main effects for group and style, as well as no significant interaction between decision-making style and CDI scale E (Knowledge of Preferred Occupational Group) treatment. The results do not provide bases to reject null hypothesis VI, as well as sub-hypotheses A and B.

Post-Experimental Descriptive Information

The researcher conducted follow-up interviews, in person and by telephone, with a random sample of approximately 30% ($n=20$) of the students in the treatment group. Students were asked five open-ended questions designed to give them an opportunity to indicate how they felt about the class, what they expected before registering for the class, whether they had accomplished their goals, where they were now in making a career decision, how they would change the class, and finally, how they felt about taking the CDI. With only one exception, students reported very strong positive feelings about the class, about achieving their expectations for learning and making career decisions. Only one person expressed negative views about the class and its benefit. This person also felt the need for more testing.

When the interviewees were asked for reactions to taking the CDI, over 75% of the interviewees made comments about the instrument being poorly written, too elementary, too long and too repetitious. One student had positive comments about the instrument, one couldn't remember any reactions, and another had no comment.

Summary

Results of the research were presented in this chapter. Due to disproportionate sex and age characteristics across groups these two variables were used as covariates in concert with the pre-test in the ANCOVA analysis of the experimental effects.

Discriminate analysis, reliability estimates (KR-20) and factor analysis provided validation evidence for the ACDM-S as a classification instrument. Significant ($p \leq .05$) increases in career maturity as measured by the Career Development Inventory were found in only Scale B (Resources for Exploration) however Scale A (Planning Orientation) increases approached the assumed significant ($p \leq .05$) level of probability. The increases on Scale A are qualified by a significant ($p \leq .05$) interaction effect between groups and styles. Rational decision makers in the treatment group increased while for other styles control group means remained higher or equal to the treatment group means. Both Scale A and B are attitudinal in nature, while Scale C, D, and E are

cognitive. Finally an informal post-experimental interview of one third of the treatment population was conducted. Results of these interviews suggest generally positive reactions to the career education class but substantiative negative reactions to the CDI instrument.

CHAPTER V

SUMMARY, DISCUSSION, CONCLUSION AND RECOMMENDATIONS

This last chapter provides an overview of the research statement and design, a discussion of the findings of the study, conclusions derived from the study, and recommendations for further research.

Summary of the Research Design and the Findings

This study used a pre-post-test comparison between treatment and control groups to determine improvements in career maturity as measured by the Career Development Inventory (CDI), as well as the impact of decision-making styles as measured by the Assessment of Career Decision-making Styles (ACDM-S) on outcomes. Treatment consisted of a ten-week career education course. Subjects in the study were one hundred fifty-five community college students; eighty-eight in the control group and sixty-four in the treatment group.

The literature reviewed for this study suggested that students experiencing a ten-week, three credit career

education course should increase in career maturity relative to students in a control group who experienced an orientation class. An Analysis of Covariance was used to assess differences in pre-post-test increases in career maturity between groups and styles. The characteristics of age and sex along with pre-test were used as covariates to adjust for differences between treatment and control groups on these variables.

An aspect of the study concerned the thesis postulated by Harren (1979) that there are various styles of career decision-making and that some styles (e. g., rational) are more effective. This study investigated the relationship of decision-making styles to the ability to profit, as reflected by pre-post testing with the CDI, from a career course. However, validation of the effects of a ten-week career education course and the effectiveness of one style over another were not found in a literature review.

Post-treatment analysis indicated that only the Resources and Exploration sub-scale (Scale B) of the CDI increased to a statistically significant level relative to pre-test measurements as a result of exposure to the career education course. The remaining scales (Scale A, C, D, and E) did not change in a statistically reliable manner. However, for Scale A, (Planning and Orientation)

the results indicated that the effect of the career education course was not uniform across the stratifying variable of student decision-making style. A statistically reliable interaction was detected as the result of differential improvement among rational decision makers exposed to the course relative to the other types of decision makers. Only in Scale A was decision-making style found to be a statistically significant factor.

In addition to the quantitative measures discussed, the investigator sought additional information on students' experience in the career education course, and interviewed one third ($n=20$) of the students in the treatment group. All but one of these interviewees felt that the career education class had helped them in making career decisions. Over 75% had negative comments about the CDI.

Discussion

This section will relate findings of the present study to previous studies, reviewed in Chapter II.

Schenk (1976) studied changes in career maturity using the third edition of the CDI and found significant increases ($p \leq .01$) in career maturity across all three scales (attitudinal and cognitive) and the composite. The present study reveals similar findings only for Scale B of the fourth edition of the CDI.

Tilden's (1976) cross validation study, which examined increases in CDI (third edition) scores in the four years of college, found that juniors and seniors did not increase on the CDI Scales, with the exception of Scale A (attitudinal). The present study provides similar results in revealing significant ($p \leq .05$) increases in one of the attitudinal scales (Scale B) in the fourth edition of the CDI. Although Tilden does not mention the mean ages of the college students in his study it is suggested that age may be a significant factor in cognitive measures of career maturity. He postulated that students may already be at their highest scoring level on the CDI. Also cognitive increases in career maturity may not be measurable with the CDI.

The present findings of measurable increases in attitudinal scales also reinforce studies by Adams (1979) and Rubinton (1980). Both used the attitudinal scale of Crites (1965), Career Maturity Inventory (CMI), and found significant increases in the treatment group following a career development program over the control group.

Using Harren's (1979) ACDM-S, Rubinton (1980) found significant ($p \leq .001$) increases in career maturity for rational decision makers experiencing a rational-logical intervention. Intuitive decision makers showed significant ($p \leq .05$) increases after experiencing an affective-intuitive intervention, and dependent decision makers showed significant ($p \leq .01$) decreases across all groups (two treatment,

one placebo, and one non-treatment). By contrast, the present study found that with the exception of the interaction effect for Scale A for the treatment group, decision-making style had no significant ($p \leq .05$) effect on career maturity outcomes across groups and styles.

In summary, the present study found results similar to those of Schenk (1976), Tilden (1976), Adams (1979) and Rubinton (1980), in that career maturity does increase on attitudinal scales of both the CDI and CMI. The study supports Tilden's (1976) suggested existence of a ceiling effect in which age may be an important factor in measuring cognitive scales of career maturity. It also supports Tilden's suggestions of the possibility that cognitive increases in career maturity may not be measured by the CDI. The present study shows that decision-making style does not have an important effect on pre-post test outcomes on CDI scales.

Post-Experimental Descriptive Information

In an effort to further examine the effects of the career course, the investigator conducted follow-up interviews in person and over the telephone with a randomly selected group ($n=20$) of students in the treatment group. Students were asked five open-ended questions, designed to give them an opportunity to express their opinions of the class, to tell what they expected before registering

for the class, whether they have accomplished their goals, their progress in making a career decision, how they would change the class, and finally how they felt about the CDI. With only one exception, students reported very strong positive opinions about the class, about achieving their expectations for learning, and about making career decisions. One student expressed negative feelings about the class and felt a need for more testing.

Students' indications that they had achieved their expectations for learning and career decision-making are of interest in relation to findings which question the effectiveness of the cognitive scales of the CDI as a measure of career maturity.

Students in the career education classes spent many hours assessing their values, needs, interests, abilities, etc. The instructor reviewed the career decision-making process and assisted students in setting goals. Students were required to submit at least two career papers, to interview at least two people in occupations in which they had an interest, and to submit a reaction paper. They were also required to read career development books and to write reaction papers. With such exposure to the career decision-making process, it is difficult to understand why increases in those areas were not reflected in post-test scores.

Conclusions

The following conclusions are drawn with respect to students at Northern Virginia Community College who were subjects for the study.

1. The ACDM-S does produce independent classification of decision-making style. Due to the newness of the instrument, and because a review of the literature revealed limited reliability and validity, a KR-20 factor analysis, factor analysis, and a discriminate analysis were performed and provided validation evidence for the ACDM-S as a classification instrument.

2. Students in the treatment group did increase in career maturity on Scale B (Resources for Exploration) of the CDI. Scale A (Planning Orientation) increases approached the assumed significance ($p \leq .05$) level of probability; however, significant ($p \leq .05$) interaction effects between groups and styles were found. Scale A and B are attitudinal in nature, while Scales C, D, and E which did not show significant ($p \leq .05$) increase are cognitive.

3. No differences of practical consequence were observed on CDI scores across decision-making style. It appears that certain decision-making styles (rational) do not contribute to increased outcomes on the scales of the CDI, with the exception of a significant ($p \leq .05$) interaction

effect with Scale A on rational decision makers.

Recommendations

Based on the findings of the present study, the following recommendations are offered.

1. It is recommended that more research be conducted using the fourth edition of the CDI to determine further validity of the instrument as a measure of career maturity.
2. Because of the limited increases in career maturity found in this study, it is recommended that additional research be conducted on other variables that contribute to career maturity. Super (1980) has suggested the contribution of other variables that are personal and situational determinants of career development. These are situational awareness, self-awareness, attitudes, interests, values, needs, academic achievement, specific aptitudes and intelligence.
3. It is recommended that the present research design be replicated with other populations. Samples should exhibit greater similarity in age and sex between treatment and control groups, making it unnecessary to use these factors as covariates.
4. It is recommended that other measures of career maturity be used which may more effectively register changes in both attitudinal and cognitive areas of career maturity. Suggested instruments are attitudinal and

cognitive sections of the CMI, or other career maturity measurement instruments which would be sensitive to the differences between the career experiences and attitudes of older adults and young college students.

5. It is recommended that follow-ups be made of students several months after experiencing a career development course to assess changes in their career development and satisfaction with their career choices.

6. Although the present study did not indicate that decision-making style was of practical consequence, decision-making is an integral component of the career development process. Further research should be conducted on how individuals make effective decisions. Possible other factors suggested by Harren (1979) to be important in the career decision-making process are: awareness of the process, characteristics of the individual, the tasks that are required and conditions under which the decisions are made.

7. Due to the possible ceiling effect suggested by Tilden (1976) it is recommended that further research be conducted in the area of career maturity of older students. Most of the research done on career maturity has focused on high school students and undergraduate college students.

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APPENDIX A
Assessment of Career
Decision Making - Styles Scale
(ACDM-S)

NAME _____ SS/# _____
 AGE _____ SEX _____

ASSESSMENT OF CAREER DECISION MAKING-STYLES SCALE (ACIM-S)

Vincent A. Harren, Ph.D.

This scale is designed to find out how you go about making important decisions in your life. Some of these decisions, for example, might be: to go to college or not; to decide on a career; or to take job K vs. Y. We believe that regardless of what the decision is about, each person has his or her own unique way of going about making decisions. We also believe that there is no one best way for everybody and that you probably learned to rely on a way which works best for you, based on your past experience.

Before filling out this scale, think about how you have made these important decisions in the past or about how you are handling decisions with which you are currently confronted. Try to get a picture of how you typically or characteristically make decisions. Then go ahead and respond to the statements below in terms of how you feel. Remember, we don't think there is a single best way for everybody, so there are no "right" or "wrong" answers.

Circle "T" (True) if you agree with the statement or "F" (False) if you disagree with it. For a statement to be true or you, it doesn't always have to be the case, but more often than not.

- T F 1. I am very systematic when I go about making an important decision.
- T F 2. I often make a decision which is right for us without knowing why I made the decision.
- T F 3. When I make a decision it is important to me what my friends think about it.
- T F 4. I rarely make an important decision without gathering all the information I can find.
- T F 5. Even on important decisions I make up my mind pretty quickly.
- T F 6. I like to have someone to steer me in the right direction when I am faced with an important decision.
- T F 7. When I make a decision I consider its consequences in relation to decisions I will have to make later on.
- T F 8. When I make a decision I just trust my inner feelings and reactions.

- T F 9. I really have a hard time making important decisions without help.
- T F 10. When I need to make a decision I take my time and think it through carefully.
- T F 11. I often decide on something without checking it out and getting the facts.
- T F 12. I often make decisions based on what other people think, rather than on what I would really like to do.
- T F 13. When an important decision is coming up, I look far enough ahead so I'll have enough time to plan and think it through before I have to act.
- T F 14. I don't really think about the decision; it's in the back of my mind for a while, then suddenly it will hit me and I know what I will do.
- T F 15. I rarely make a decision without talking with a close friend first.
- T F 16. I double-check my information source to be sure I have the right facts before deciding.
- T F 17. In coming to a decision about something I usually use my imagination or fantasies to see how I would feel if I did it.
- T F 18. I put off making many decisions because thinking about them makes me uneasy.
- T F 19. Before I do anything important, I have a carefully worked out plan.
- T F 20. I don't have to have a rational reason for most decisions I make.
- T F 21. I seem to need a lot of encouragement and support from others when I make a decision.
- T F 22. I don't make decisions hastily because I want to be sure I make the right decisions.
- T F 23. I make decisions pretty creatively, following my own inner instincts.
- T F 24. There's not much sense in making a decision that is going to me unpopular.
- T F 25. Often I see each of my decisions as stages in my progress towards a definite goal.

- T F 26. I usually make my decisions based on how things are for me right now rather than how they'll be in the future.
- T F 27. I don't have much confidence in my ability to make good decisions, so I usually rely on other's opinions.
- T F 28. I like to learn as much as I can about the possible consequences of a decision before I make it.
- T F 29. A decision is right for me if it is emotionally satisfying.
- T F 30. I usually don't have a lot of confidence in my decisions unless my friends give me support for them.

APPENDIX B
Permission Statement

PERMISSION STATEMENT

I give my permission for my scores on the Career Development Inventory and the Assessment of Decision Making Styles to Warren Baldwin for his study of Career Maturity. I understand that all data reported will be confidential, done by groups and that no identifying characteristics of individuals will be disclosed.

.....

(Signature)

(Date)

Social Security Number

APPENDIX C

Career Education Class Syllabus

Career Education Class Syllabus

Week	Topic
1.	Introduction - Overview of the Career Development Process, Assessment of Work Attitudes, Maslow's Hierarchy of Needs, Career Theories
2.	Personal Awareness - Decision-Making Process, Values Clarification, Lifestyle/Personal/Economic Needs
3.	Personal Awareness - Assessment of Interests, Skill Identification, Identifying Motivators
4.	Personal Awareness - Putting it together
5.	Career Awareness - Overview, Career Resources, Informational Interview
6.	Career Awareness - Informational Interview, Tentative Career Statement
7.	Job Campaign Strategy - Overview, Coverletter, Resume Writing
8.	Job Campaign Strategy - Resume Writing, Interviewing
9.	Job Campaign Strategy - Interviewing
10.	Wrap-up - Summary, Evaluation

APPENDIX D
Career Education
Instructor Checklist

Career Education
Instructor Checklist

<u>Topics Covered</u>	<u>date(s) covered</u>
<u>Overview of the career development process</u>	
<u>Assessment of work attitudes</u>	
<u>Maslow's hierarchy of needs</u>	
<u>Values clarification</u>	
<u>Needs assessment (life style considerations)</u>	
<u>Identifying motivators</u>	
<u>Interest assessment</u>	
<u>Decision making process</u>	
<u>Overview of the world of work</u>	
<u>Career resources</u>	
<u>Occupational groups</u>	
<u>Informational interview (s)</u>	
<u>Tentative career statement</u>	
<u>Job campaign strategy overview</u>	
<u>Writing a cover letter</u>	
<u>Writing a resume</u>	
<u>Interviewing skills</u>	
<u>Summary (Evaluation)</u>	

APPENDIX E

CDI Norms of 8th,
10th, & 12th Grade Students

CDI Norms of 8th, 10th, & 12th Grade Students

Preliminary Normative Data (Super & Forrest, 1972)

<u>Scale</u>	<u>Eight Grade</u>			<u>Tenth Grade</u>			<u>Twelfth Grade</u>		
	<u>n</u>	<u>mean</u>	<u>SD</u>	<u>n</u>	<u>mean</u>	<u>SD</u>	<u>n</u>	<u>mean</u>	<u>SD</u>
A	79	92.03	--	74	104.28	19.25	74	116.60	--
B	78	208.47	--	66	226.00	45.49	78	257.32	--
C	82	12.36	--	69	16.97	4.57	74	19.87	--
Total	66	318.54	--	60	347.73	58.61	70	395.97	

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THE EFFECTS OF A CAREER DEVELOPMENT COURSE
ON CAREER MATURITY AND ON CAREER MATURITY
AS IMPACT BY DECISION-MAKING STYLE

by

Warren J. Baldwin

(ABSTRACT)

The purpose of this study was to investigate the effects of a ten week career education course on the concept of career maturity and the impact of decision-making style on outcomes. A pre-post-test design was used with career maturity being assessed by Super's Career Development Inventory (CDI), and decision-making style being determined by Harren's Assessment of Career Decision-Making - Styles (ACDM-S). A treatment and control group were used, and due to disproportionate sex and age characteristics across groups these two variables were used as covariates in concert with the pre-test in the ANCOVA analysis of the experimental effects.

Discriminate analysis, reliability estimates (KR-20) and factor analysis provided validation evidence for the ACDM-S as a classification instrument. Significant ($p \leq .05$) increases in career maturity as measured by the CDI were found in only Scale B (Resources for Exploration), however Scale A increases approached the assumed significance ($p \leq .05$) level of probability. Significant ($p \leq .05$) interaction effects between groups and styles were found on Scale A. Rational decision-makers in the

treatment group increased, while for other styles control group means remained higher or equal to the treatment group means. Both Scale A and B are attitudinal in nature, while C, D, and E are cognitive. An informal post-experimental interview of one third ($\underline{n}=20$) of the treatment group suggest generally positive reactions to the career education class, but substantive negative reactions to the CDI instrument.